NSW CROP TECHNOLOGY CENTRE

FAR AUSTRALIA FIELD DAY

INCREASING PRODUCTIVITY & PROFITABILITY

Friday 17th October 2025

FAR Australia Wallendbeen Crop Technology Centre 2025

SOWING THE SEED FOR A BRIGHTER FUTURE

Thanks to our host farmer: Charlie Baldrey

VISITOR INFORMATION

We trust that you will enjoy your day with us at our NSW HRZ 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 THE SOUTHERN NSW HIGH ALTITUDE REGION (HAR)

FEATURING FAR Australia INDUSTRY INNOVATIONS

On behalf of myself and the FAR Australia team, I am delighted to welcome you to our 2025 NSW Crop Technology Centre (HAR) Field Day featuring both Industry Innovations and GRDC investments.

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 or GRDC levy investments. More information on our Industry Innovations initiatives is available in the booklet.

Today you can see first-hand the impact of innovative germplasm, treatments and techniques on enhancing crop performance and profitability in this high-altitude region which has been on average the highest yielding of all FAR Australia Crop Technology Centres in mainland Australia.

Event Highlights:

- Topics for this High Rainfall Zone (HRZ) site and other FAR Crop Technology Centres in the national network will be featured.
- An opportunity to engage with the Managing Director of the Grains Research Development Corporation (GRDC) to hear the vision for RD&E in Australian broadacre.
- One of the country's foremost phenology experts Dr Felicity Harris talking about frost, phenology and late breaks – challenges and opportunities to maximise returns.
- The first-year results of a GRDC investment looking to benchmark agronomy and profitability in 93 paddocks across Australia, primarily in the HRZ.
- A look at five years wheat research results at Wallendbeen (2020 – 2024) – what did we learn.
- Benchmarking agronomics and profitability in the southern NSW HRZ – what can we take away from the first year of the GRDC Hyper Profitable Crop (HPC) results generated and more generally across 93 paddocks monitored nationally. Ben Jones

and Tom Price lead the discussion.

- Most of all we want to share your insights from growers to advisers and researchers 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 Nigel Hart (GRDC) and Dr Felicity Harris (CSU).

Putting together a quality Crop Technology Centre takes a huge amount of planning so a very big thanks to our host farmers here at Wallendbeen, Baldry and Sons, in particular Charlie Baldry for his tremendous practical support given to the FAR Australia team.

Finally, I would like to thank the industry for investing in our research programme this season, particularly GRDC, key agrichemical manufacturers and plant breeders under our Industry Innovations portfolio.

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

NSW HRZ CROP TECHNOLOGY CENTRE FIELD DAY

FRIDAY 17th OCTOBER 2025

In-shed presentations at Machinery shed & workshop	Station No.	10:30	11:00	11:30	12:00	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** ***Andrew Rice, FAR Australia Board Chair*** *Outline of the programme for the day.*	Coffee and introductions					
Nigel Hart - Managing Director, Grains Research Development Corporation (GRDC) *A vision for the future of R,D & E in Australian broadacre.*	1		1			Lunch and refreshments
Ben Jones & Tom Price, FAR Australia ***Pushing potential profit? Benchmarks for agronomy and profit*** *The first year results our new GRDC Hyper Profitable Crops project are out. Ben and Tom look at the analysis of agronomic and profitability benchmarking in the S. NSW region and the national results from 93 paddocks nationwide in 2024/25.*	2			1		
Dr Felicity Harris ***Senior Lecturer, CSU and GRDC Panel Member*** *Frost, phenology and late breaks – challenges and opportunities to maximise returns.*	3				1	
In-field presentations	**Session No.**		**11:00**	**11:30**	**12:00**	**12:30**

FAR Australia would like to thank AGF Seeds and Delta Ag; AGF Seeds for their sponsorship of todays event and Delta Ag for providing lunch and refreshments for our guests.


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AGRIBUSINESS
We partner with farmers
to make the right decisions.
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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 its profitable potential? The Hyper Profitable Crops project has some answers. Input use, agronomy, yield and quality were monitored on 95 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. Fourteen paddocks in New South Wales 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 FarmLink and Riverine Plains). 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 were applied across multiple years (e.g. 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
Percent of potential	how much of potential yield was achieved

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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 percent potential yield achieved of around 80% or higher (Figure 1). This seems like a reasonable benchmark for production. Higher percent 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 percent potential achieved.

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

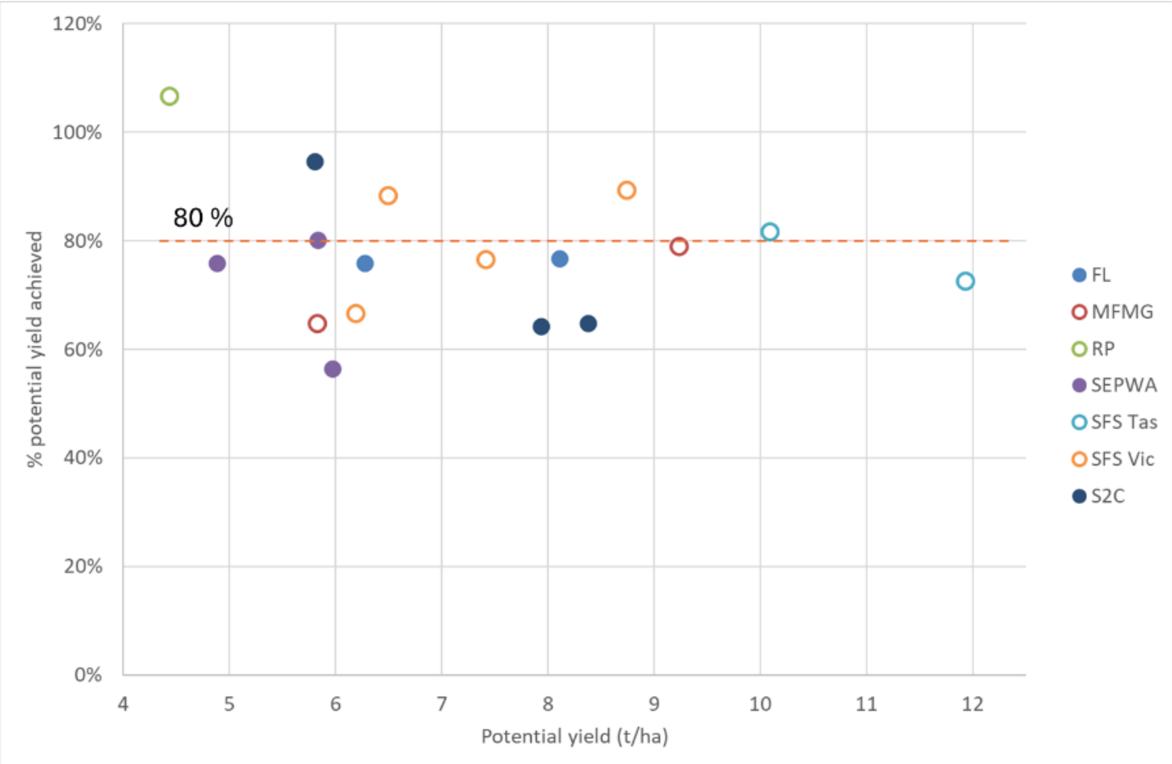

Figure 1. Potential yield benchmark: average per cent potential yield for each discussion group vs potential yield. Colours represent different hubs. The dashed line is a proposed potential yield benchmark of 80%.

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

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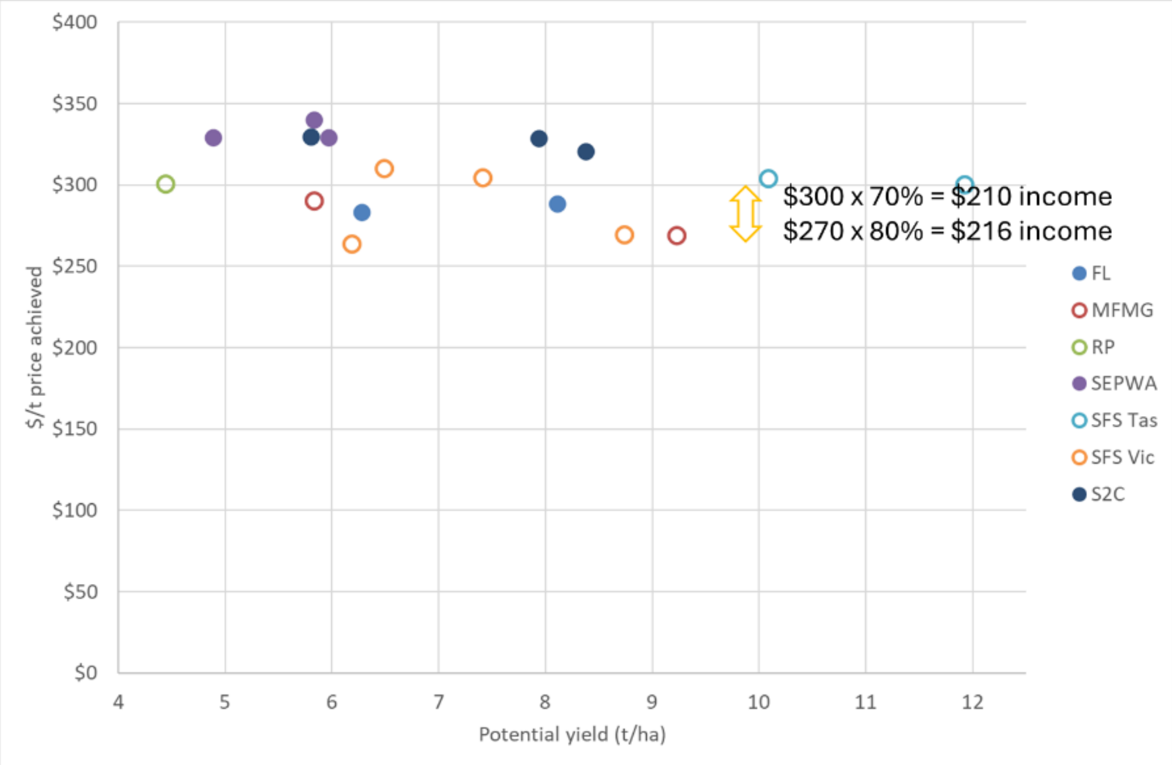

Figure 2. Price achieved benchmark: average grain price achieved in each discussion group vs potential yield. Colours represent different hubs.

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.

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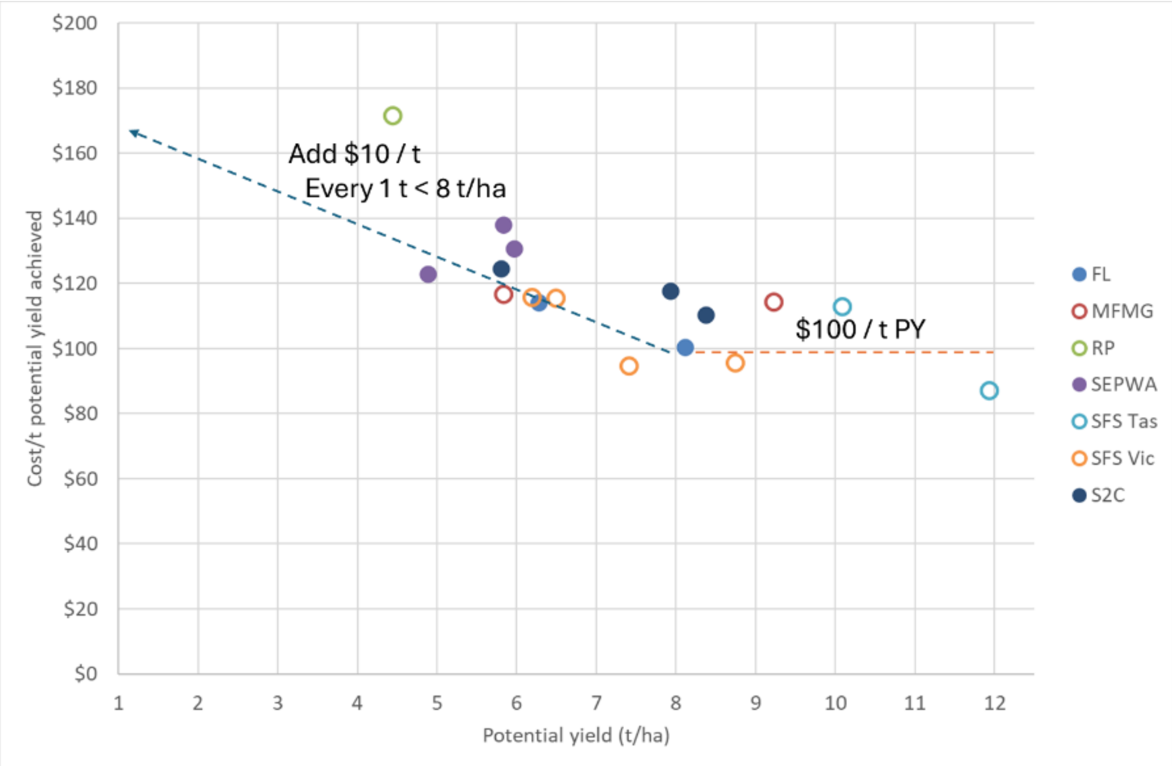

Figure 3. Cost benchmark: average cost per tonne potential yield in each discussion group vs potential yield. Colours represent different hubs. In hubs with open circles, costs were not measured before sowing. The dashed line is a proposed cost benchmark of $100/t potential yield, increasing $10/t for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

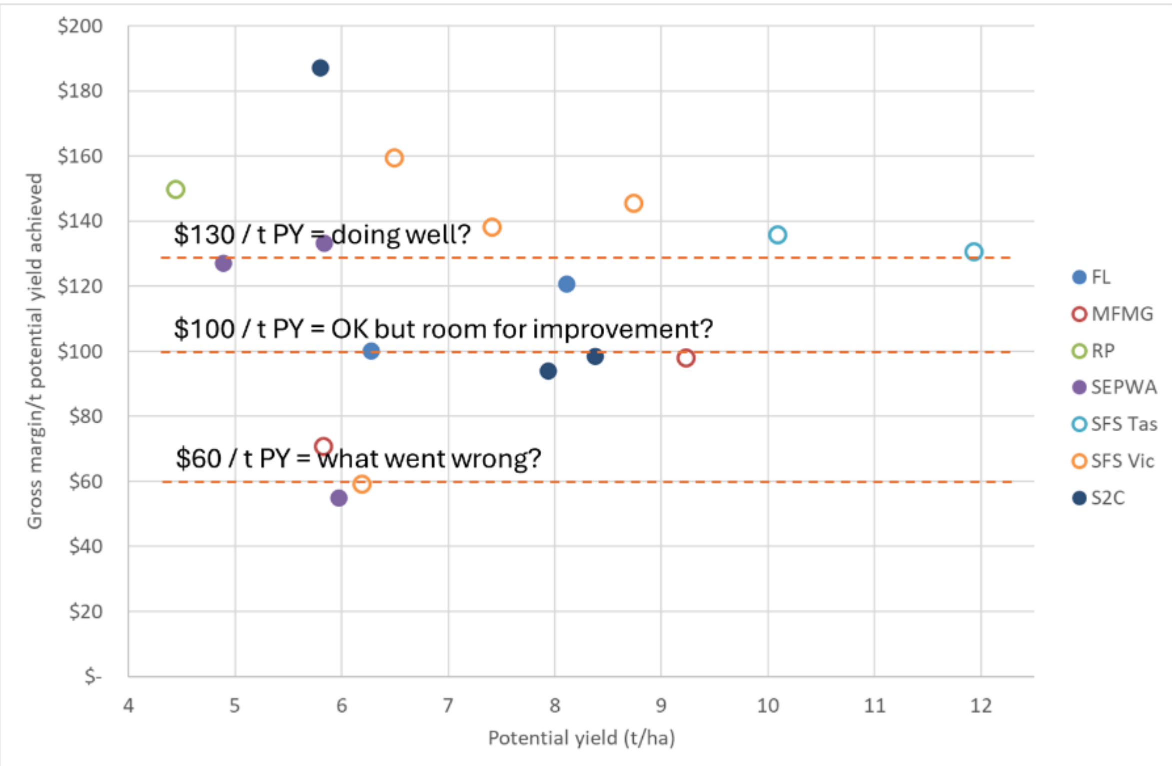

Figure 4. Profit benchmark: average profit per tonne potential yield in each discussion group vs potential yield. Colours represent different hubs. Dashed lines indicate proposed benchmarks.

Pushing potential profit?

Some benchmarks for wet and drier environments.

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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 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 $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 2024 in the New South Wales paddocks, there was little that could be varied within 11 weeks of harvest (Figure 5). About $20/ha/t potential yield is spent between 18 and 11 weeks before harvest, and another $15-20/ha/t potential yield in the four weeks before that. New South Wales has a small advantage compared to other areas in the project (not shown), where little can be changed in the 11 weeks before harvest, and the last $20/ha/t potential yield is spent between 18 and 11 weeks before harvest.

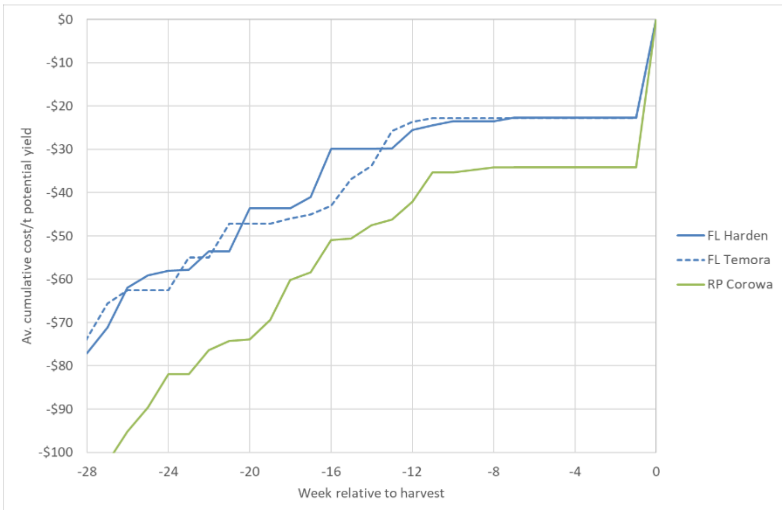

Figure 5. Cost remaining to be spent vs weeks before harvest, average for New South Wales (FL = FarmLink, RP = Riverine Plains) discussion group paddocks in 2024.

Pushing potential profit?

Some benchmarks for wet and drier environments.

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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.

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: Tom Price, Darcy Warren, Max Bloomfield, Aaron Vague and Nick Poole.

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

AFTERNOON TIMETABLE

NSW HRZ CROP TECHNOLOGY CENTRE FIELD DAY

FRIDAY 17th OCTOBER 2025

In-field presentations at Cereal Research site	Station No.	1:30	2:00	2:30	3:00	3:30
Darcy Warren, Nick Poole and Ben Morris, FAR Australia. ***Making better decisions on disease management practices in wheat and barley*** *. Looking at three key GRDC projects (RiskWise, IDM strategies for NFNB & Wheat Disease Management) that seek to use new technologies and decision support tools to make profitable and sustainable decisions with fungicides.*	5	1				
Tom Price and Ben Morris, FAR Australia ***How do faba beans compare to other grain legumes – Can we successfully grow lentils over a wider geographic footprint?*** *Can we improve grain legume performance with disease management, soil amelioration, phosphorus and pH adjustments. Tom and Ben review FAR Australia results.*	6		1			Closing address and refreshments
Nick Poole, FAR Australia ***Closing the yield gap - reflection on FAR Australia research results from the Wallendbeen Crop Technology Centre (2020 - 2024)*** *Nick looks at some of the FAR Australia results obtained over the last five years working in Wallendbeen, NSW.*	7			1		
FAR Australia team *The NSW team look at this year's* ***Germplasm wheat trials and the biological benchmarking trials*** *- what have learnt so far in GEN? Consistent variety performers, genetic resistance to disease & response to fungicides.*	8				1	
In-field presentations	**Session No.**	**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.	

FAR Australia would like to thank AGF Seeds and Delta Ag; AGF Seeds for their sponsorship of todays event and Delta Ag for providing lunch and refreshments for our guests.

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?

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

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.

Integrated management of Net form net blotch (NFNB) with triple mutant fungicide resistance threats in south-west Victoria

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 the region 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 in south-west Victoria

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 in south-west Victoria

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

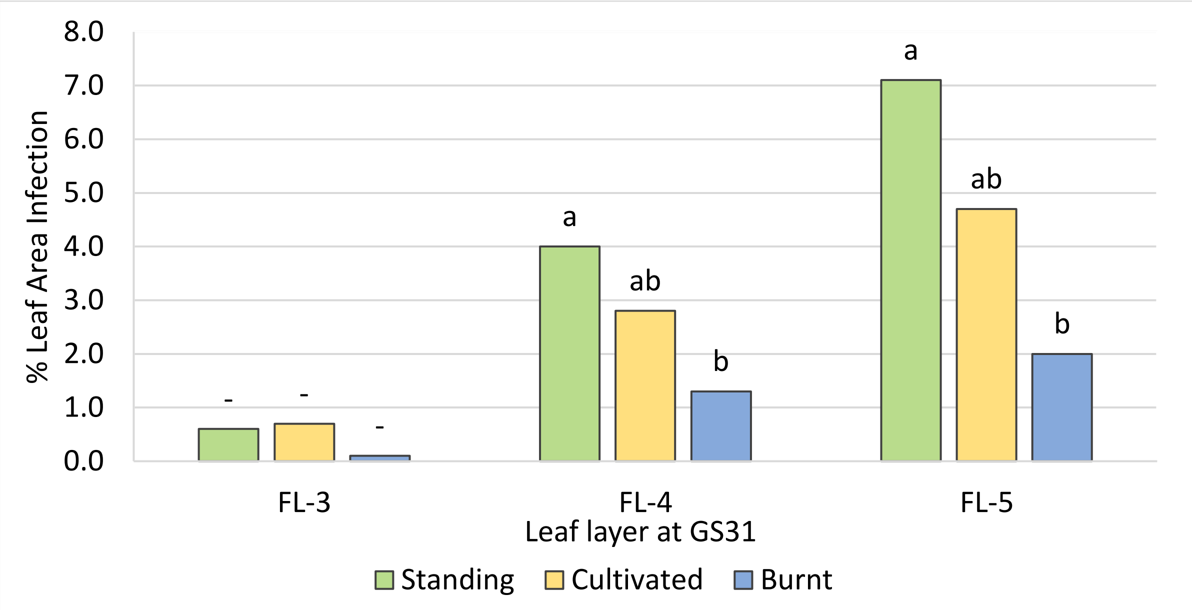

Figure 1. Influence of stubble management on early season Net form net blotch (NFNB) severity (%LAI), assessed 18 August 2025, cv Neo CL.

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.

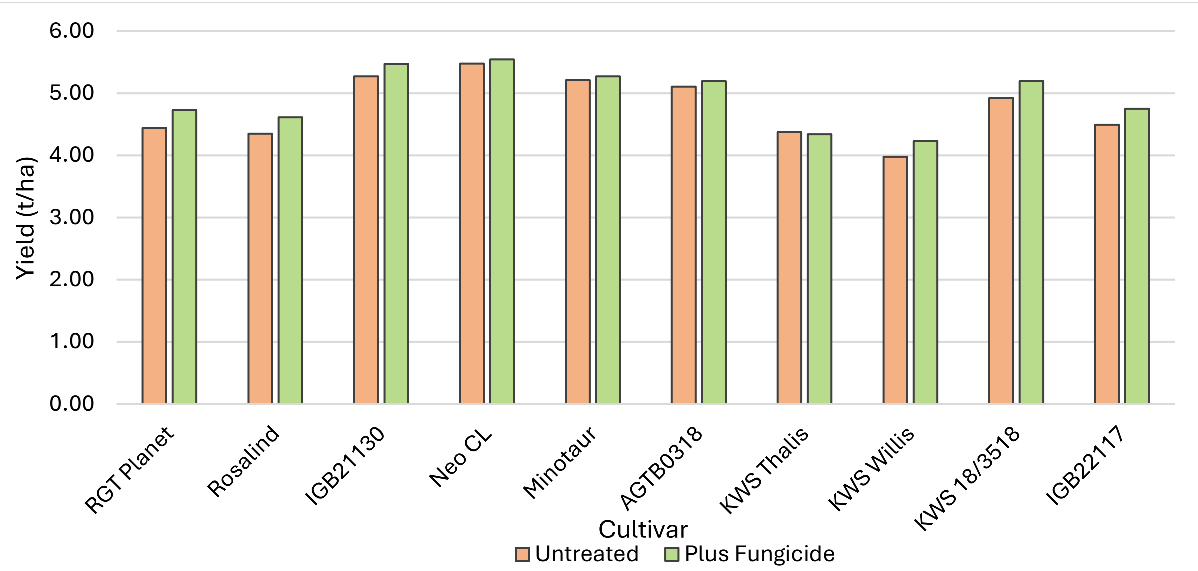

Figure 2. Results from FAR Australia's 2024 Barley Germplasm Evaluation Network (GEN) TOS 2 trial showing influence of barley variety and fungicide application on grain yield (t/ha) (P Value= <0.820, LSD= ns). These trials provide an insight into newly released barley varieties and promising breeder 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 in south-west Victoria

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 the region, 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.

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

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

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**	

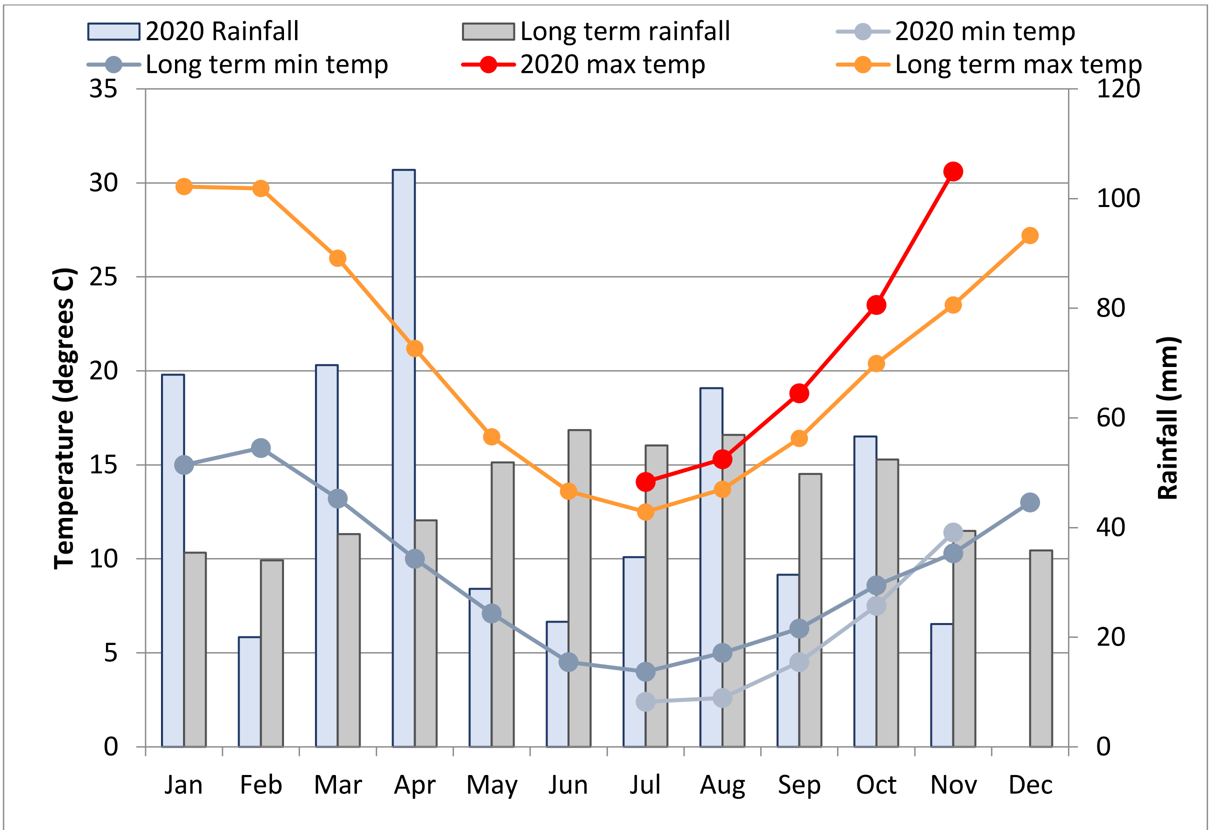

Figure 1. Average monthly rainfall, average monthly maximum and minimum temperatures and absolute maximum or minimum at the at the Yabba North trial site (MRZ, Victoria) in 2020 compared with the long term average for Dookie, VIC (closest long term weather station).

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.

MORNING TIMETABLE

NSW HRZ CROP TECHNOLOGY CENTRE FIELD DAY

FRIDAY 17th OCTOBER 2025

In-shed presentations at Machinery shed & workshop	Station No.	10:30	11:00	11:30	12:00	12:30
Welcome and introductions ***Nick Poole - Managing Director, FAR Australia*** ***Andrew Rice, FAR Australia Board Chair*** *Outline of the programme for the day.*	Coffee and introductions					
Nigel Hart - Managing Director, Grains Research Development Corporation (GRDC) *A vision for the future of R,D & E in Australian broadacre.*	1		1			Lunch and refreshments
Ben Jones & Tom Price, FAR Australia ***Pushing potential profit? Benchmarks for agronomy and profit*** *The first year results our new GRDC Hyper Profitable Crops project are out. Ben and Tom look at the analysis of agronomic and profitability benchmarking in the S. NSW region and the national results from 93 paddocks nationwide in 2024/25.*	2			1		
Dr Felicity Harris ***Senior Lecturer, CSU and GRDC Panel Member*** *Frost, phenology and late breaks – challenges and opportunities to maximise returns.*	3				1	
In-field presentations	**Session No.**		**11:00**	**11:30**	**12:00**	**12:30**

FAR Australia would like to thank AGF Seeds and Delta Ag; AGF Seeds for their sponsorship of todays event and Delta Ag for providing lunch and refreshments for our guests.

NSW CROP TECHNOLOGY CENTRE

AFTERNOON TIMETABLE

FAR AUSTRALIA

GRDC GRAINS RESEARCH & DEVELOPMENT CORPORATION

NSW HRZ CROP TECHNOLOGY CENTRE FIELD DAY

FRIDAY 17th OCTOBER 2025

In-field presentations at Cereal Research site	Station No.	1:30	2:00	2:30	3:00	3:30
Darcy Warren, Nick Poole and Ben Morris, FAR Australia. Making better decisions on disease management practices in wheat and barley *. Looking at three key GRDC projects (RiskWise, IDM strategies for NFNB & Wheat Disease Management) that seek to use new technologies and decision support tools to make profitable and sustainable decisions with fungicides.*	**5**	1				
Tom Price and Ben Morris, FAR Australia How do faba beans compare to other grain legumes – Can we successfully grow lentils over a wider geographic footprint? *Can we improve grain legume performance with disease management, soil amelioration, phosphorus and pH adjustments. Tom and Ben review FAR Australia results.*	**6**		1			**Closing address and refreshments**
Nick Poole, FAR Australia Closing the yield gap - reflection on FAR Australia research results from the Wallendbeen Crop Technology Centre (2020 - 2024) *Nick looks at some of the FAR Australia results obtained over the last five years working in Wallendbeen, NSW.*	**7**			1		
FAR Australia team *The NSW team look at this year's* ***Germplasm wheat trials and the biological benchmarking trials*** *- what have learnt so far in GEN? Consistent variety performers, genetic resistance to disease & response to fungicides.*	**8**				1	
In-field presentations	**Session No.**	**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.	

FAR Australia would like to thank AGF Seeds and Delta Ag; AGF Seeds for their sponsorship of todays event and Delta Ag for providing lunch and refreshments for our guests.

AGF seeds

DELTA AGRIBUSINESS

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/m^2)**	**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	

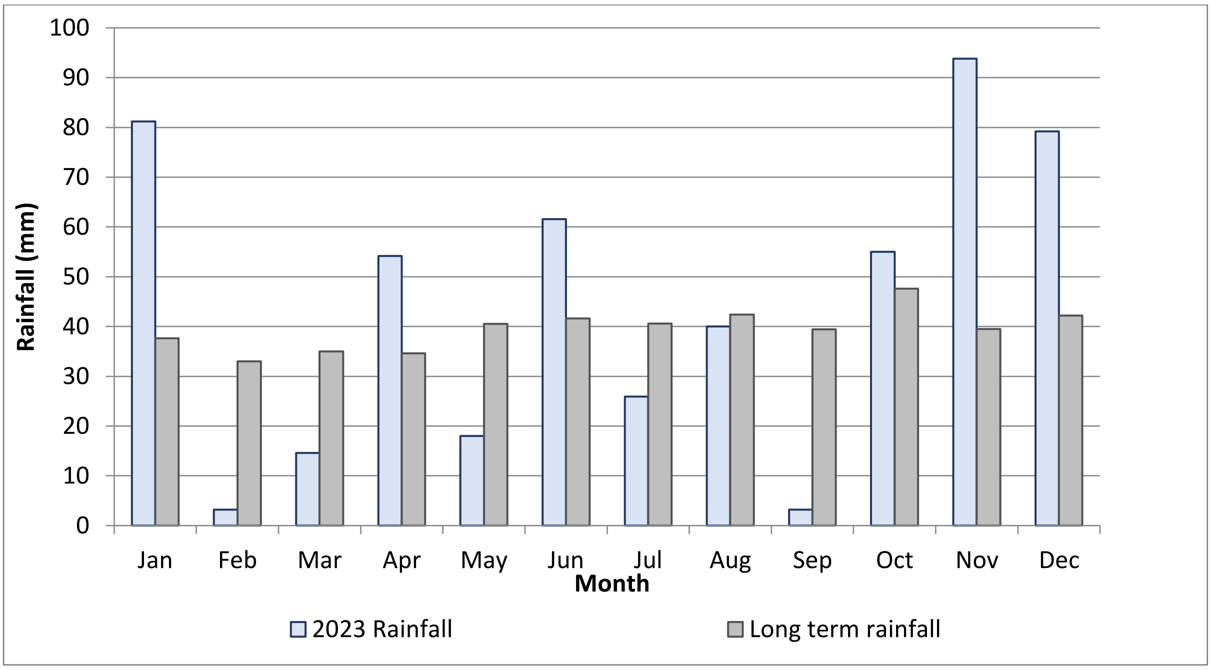

Figure 1. Monthly rainfall for Daysdale site in 2023 and the long term mean.

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

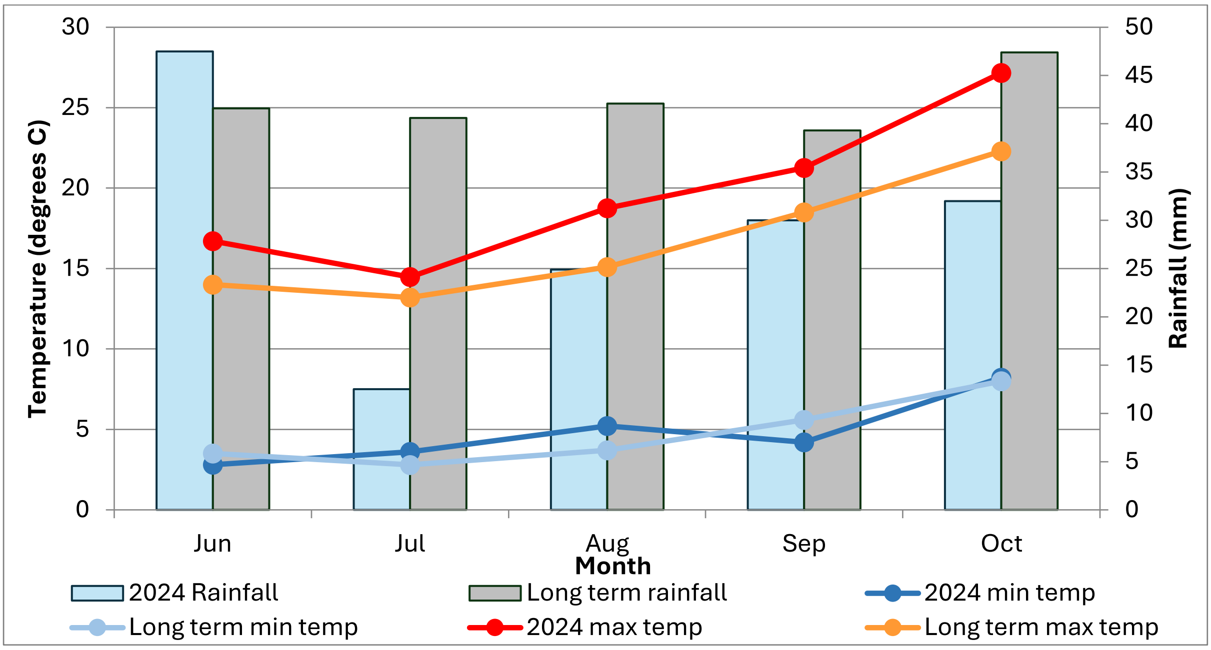

Figure 1. 2024 growing season rainfall recorded on site and long-term rainfall recorded at Oaklands General Store (1925 to 2024) and 2024 minimum and maximum temperatures recorded on site long-term mean recorded at Corowa Airport (1890 to 2024) for the growing season (June-October). Rainfall June to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

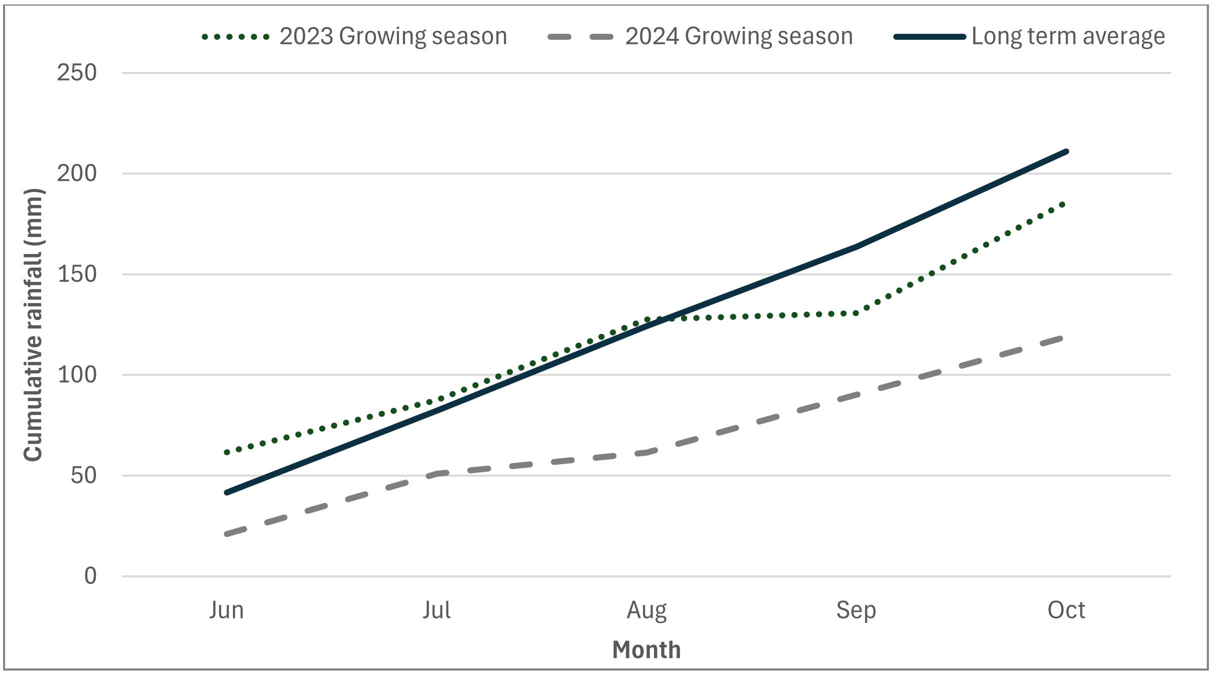

Figure 2. Cumulative growing season rainfall for 2023, 2024 and the long-term average for the growing season (June-October).

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.*

Wallendbeen, NSW

- *More than any other FAR site the Wallendbeen Crop Technology Centre (CTC) has provided the most consistent high wheat yields on the mainland, an aspect of higher altitude moderating temperatures (assuming soil water is not the limiting factor) and no water logging.*
- *However, the fertility of the mixed farming system at Wallendbeen is the other main factor that stands out looking at soil mineral N available in early winter and the subsequent yields of nil nitrogen crops.*
- *Lastly, initial Hyper Yielding Crops (HYC) elite germplasm screening illustrated that European longer season winter wheats (both red and white options) have a fit in the region. Part of this screening work continues with FAR's Germplasm Evaluation Network (GEN) trials in 2025.*

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.

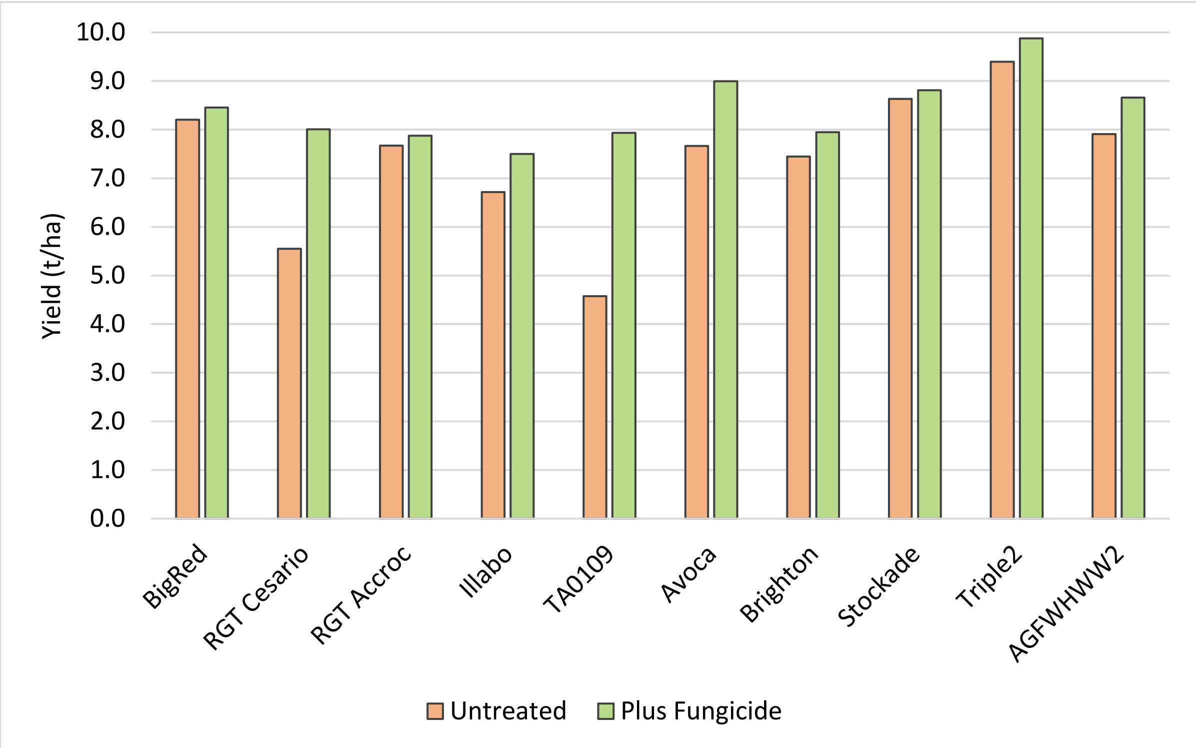

Figure 1. Variety yield response to fungicide application – **Wallendbeen CTC, NSW 2024** sown 17 April **2024**. **GSR (Apr-Nov) 390.8mm**

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

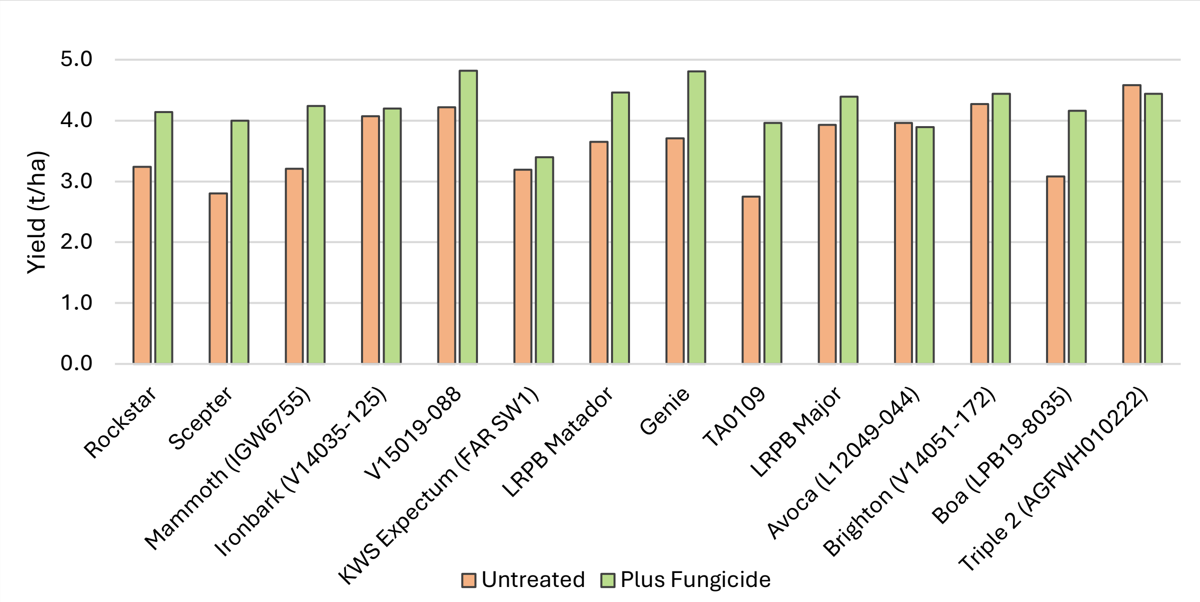

Figure 2. Influence of variety and fungicide application (based on three foliar sprays) on grain yield (t/ha) at **Gnarwarre, Victoria CTC** – sown 20 May **2024**. **GSR (Apr-Nov) 255mm.**

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.*

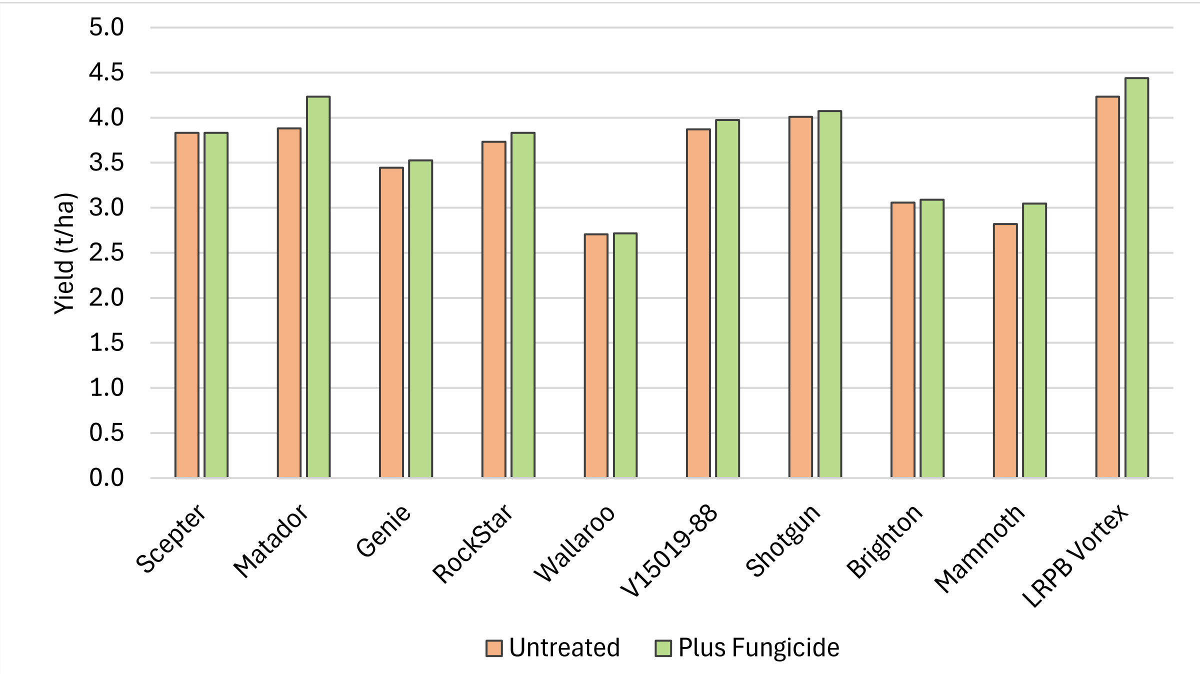

Figure 3. Influence of variety and fungicide application (based on two foliar sprays) on grain yield (t/ha) at **Gibson, Esperance CTC** – sown 10 May **2024** (t/ha). **GSR (Apr-Oct) 279mm.**

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.

Overseas Winter Wheats at Wallendbeen

The last five years at Wallendbeen have illustrated that in seasons with reasonable yield potential longer season winter wheats from Europe (both red and white grained) have a place at higher altitudes in southern NSW. The elite screening initially carried out under HYC has illustrated this niche and encouraged growers to take up varieties such as Big Red, RGT Accroc and Anapurna. If we look back to 2020, we can see how some of these options came through our initial screening work to become commercial options.

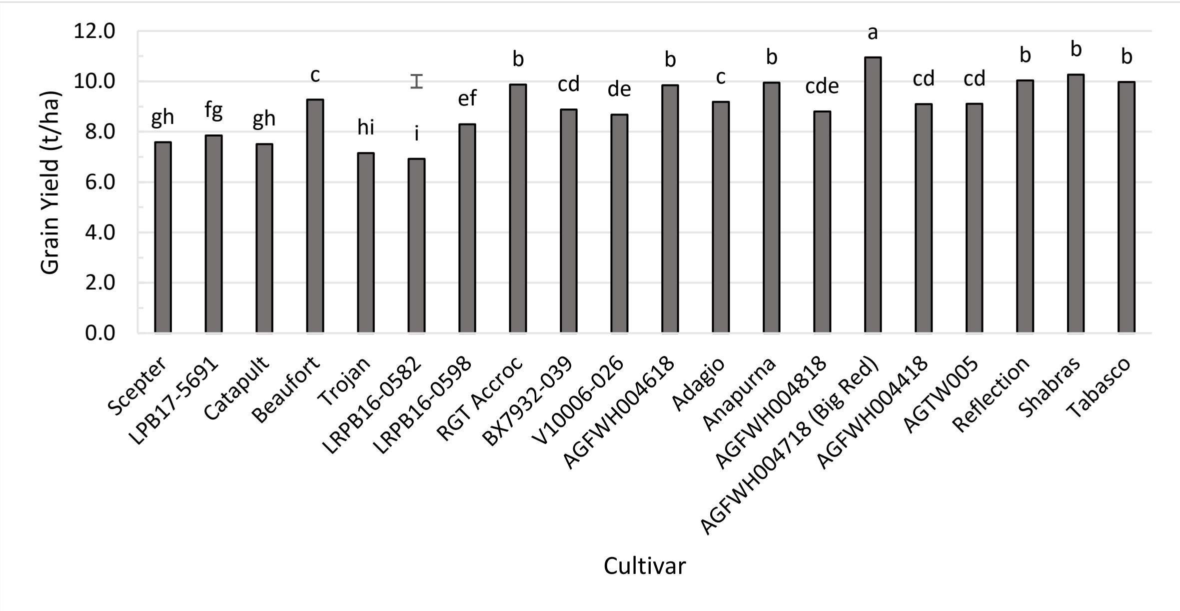

Figure 4. 2020 Elite Screen Influence of cultivar on grain yield (t/ha) under HYC management. *Cultivars sorted from fastest (left) to slowest developers (right) days to flowering GS60.*

The red grained feed wheat Big Red and Anapurna standing out in subsequent years as being high yielding and disease resistant. This screening has partially continued but is now dependent on the breeder's entering lines in FAR's GEN programme, however since these red wheats are regarded as feed less emphasis is placed on upon them. There are exceptions and the European slightly shorter season red grained winter wheat Triple 2 is a good example (highest yielding variety in 2024 – see GEN paper). However, other long season white wheat options such as RGT Waugh (SFR86-085) have also been identified as having a place, with this variety and Longford (AGFWH004818) performing very strongly in 2022 under intense disease pressure along with Anapurna and Big Red (all achieved over 8t/ha with no fungicide applied). Figure 5 shows the highest wheat yields achieved at the centre over the last five years 2020-24.

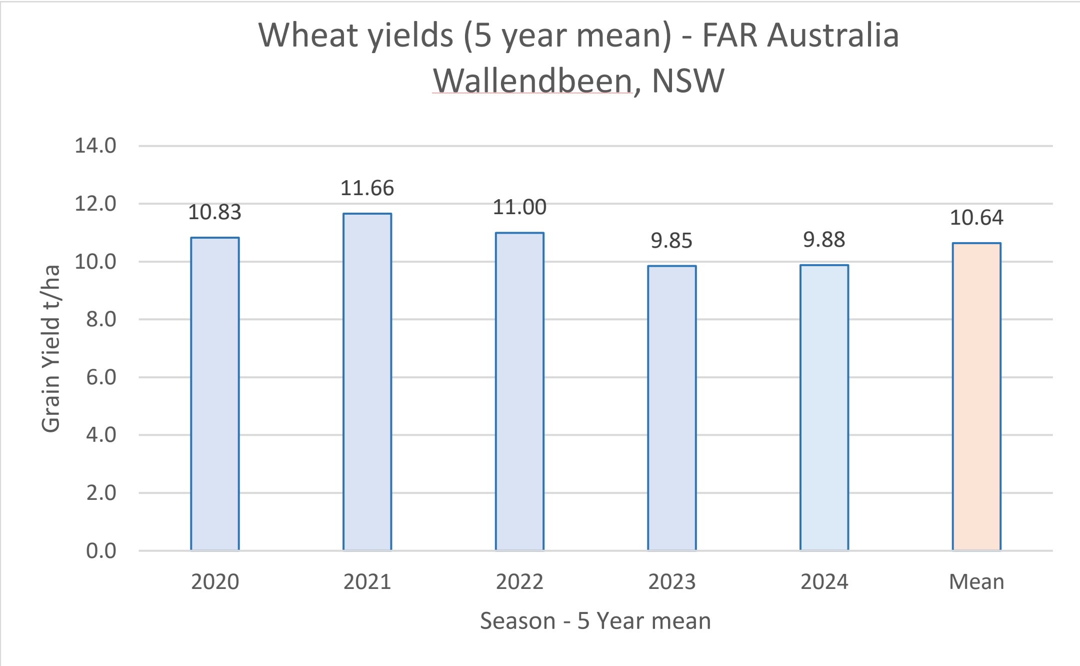

Figure 5. Highest wheat yields achieved at the FAR Australia Wallendbeen, NSW CTC 2020 - 2024

Farming systems fertility

The rotation at the Wallendbeen CTC has illustrated that high fertility in a mixed farming rotation, essentially six years of pasture legume (Fescue/Lucerne/Clover) followed by six years cropping (canola, wheat, canola, wheat, canola, wheat) not only underpins high wheat yields (when available soil moisture allows) but also illustrated that higher yields are not necessarily dependent on very high inputs of applied nitrogenous fertiliser. The following table looks at the levels of available soil N present in winter during 4th year of the cropping phase illustrating this fertility and the importance of testing for it, particularly in mixed farming systems.

Available soil mineral N in winter kg N/ha (0-60cm)– Wallendbeen Crop Technology Centre 2020-23

2020	**2021**	**2022**	**2023**	**Mean**
68.5	228	142	226	**166**

Under the various levels of fertility, there has not been a yield response beyond 160 kg N/ha applied illustrating the importance of soil N reserves and the mineralisation capacity of the soil to provide the difference. Table 1 taken from the 2023 season at Wallendbeen illustrates this point in the white wheat Stockade (also tested by in the HYC elite screening work conducted back in 2020). At N input levels of 200 kg N/ha three split N strategies have been higher yielding than two split N strategies.

Table 1. 2023 Influence of nutrition strategy on wheat grain yield (t/ha) and grain quality (Protein (%), thousand seed weight (TSW), test weight (kg/hL), and screenings (%) cv Stockade

		Grain Yield and Quality									
Treatment		**Yield t/ha**		**Protein %**		**TSW g**		**Test Weight kg/hL**		**Screenings %**	
1	0N	8.03	-	9.0	f	38.8	-	77.1	-	5.9	c
2	80kg N/ha	8.35	-	10.2	e	36.5	-	76.1	-	6.3	bc
3	120kg N/ha	8.33	-	10.8	d	33.3	-	76.1	-	6.3	bc
4	160kg N/ha	8.70	-	10.9	d	34.6	-	76.4	-	6.0	c
5	200kg N/ha	8.08	-	11.8	ab	33.8	-	74.1	-	7.2	ab
6	240kg N/ha	8.08	-	12.0	a	33.4	-	75.1	-	7.4	a
7	280kg N/ha	8.48	-	12.0	a	33.8	-	75.1	-	7.2	ab
8	200kg N/ha (3 split)	8.62	-	11.6	bc	34.7	-	75.6	-	6.7	abc
9	120kg N/ha + Manure	8.51	-	11.2	cd	32.2	-	74.7	-	7.5	a
10	120kg N/ha + Manure Equiv.	8.57	-	11.6	bc	34.5	-	75.4	-	7.5	a
Mean		**8.38**		**11.1**		**34.5**		**75.6**		**6.8**	
P Value		0.142		<0.001		0.115		0.146		0.004	
LSD P=0.05		ns		0.4		ns		ns		1.0	

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MATURITY SPEED (VERY QUICK – VERY SLOW)

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MS	SVS	MR	MR

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MATURITY SPEED (VERY QUICK – VERY SLOW)

BLACKLEG RATING	BLACKLEG GROUP	POD SHATTER RESISTANCE
R	AH	

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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

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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

Protecting and feeding faba beans during the critical period

Aaron Vague[1], Nick Poole[1], Darcy Warren[1]
[1] Field Applied Research (FAR) Australia

Key point summary

- From 2015-2024, the FAR Australia faba bean research program has produced a fungicide response in only 50% of the years.
- In the responsive years disease control is pivotal in the period just after the start of flowering (1-3 weeks), when seed number and yield formation is being determined.
- In a low-moderate chocolate spot severity season SW Victoria (2024) there was adequate control and a yield benefit from a two-spray conventional strategy.
- Although the dry season in 2024 made additional phosphorus uneconomic, there were alterations in plant architecture with an additional 50 kg/ha P showing a trend of increased branching, plant height, and podding; and statistically significant effects on 100 seed weight, dry matter, and grain yield

Background

FAR Australia collaborates in two Grains Research & Development Corporation (GRDC) funded projects; "Development and extension to close the economic yield gap and maximise farming systems benefits from grain legume production" investment (DJP2105-006RTX) and "Epidemiology, economic thresholds and management of Ascochyta blight and Botrytis diseases in lentil and faba bean" (DJP2304-004RTX). As part of these GRDC Southern region grain legume projects we are targeting 6-8t/ha dryland yields in Gnarwarre with an objective of greater understanding the physiological and pathological constraints of integrated disease management of faba beans.

Over the last decade the most prevalent disease has been Chocolate spot caused by the pathogen *Botrytis fabae*. This disease is particularly prevalent after crop canopy closure, in line with an increase in humidity (commonly quoted as >70%). The disease has a temperature range of approximately 15 – 28°C with a more rapid spread with warmer temperature within this range. Infection can occur on many parts of the plant including flowers, leaves, stems and pods. Without a truly resistant germplasm there needs to be a disease control strategy in high-risk scenarios; for example, proximity to badly infected stubbles from the season before.

How do we make fungicide decision when we only achieve a yield response in 50% of years?

From 2015-2024 the FAR Australia faba bean research program has produced a fungicide response in only 50% of the years (Figure 1). Considering the enduring label of faba beans as "failure beans" is often closely associated with their propensity to have high yield losses associated with disease, it is somewhat unfounded in the data. Yet fear of a bad disease year perpetuates into every season and often chemical inputs are applied regardless of the amount of disease present. The reality is that a dry spring can act as a very good fungicide.

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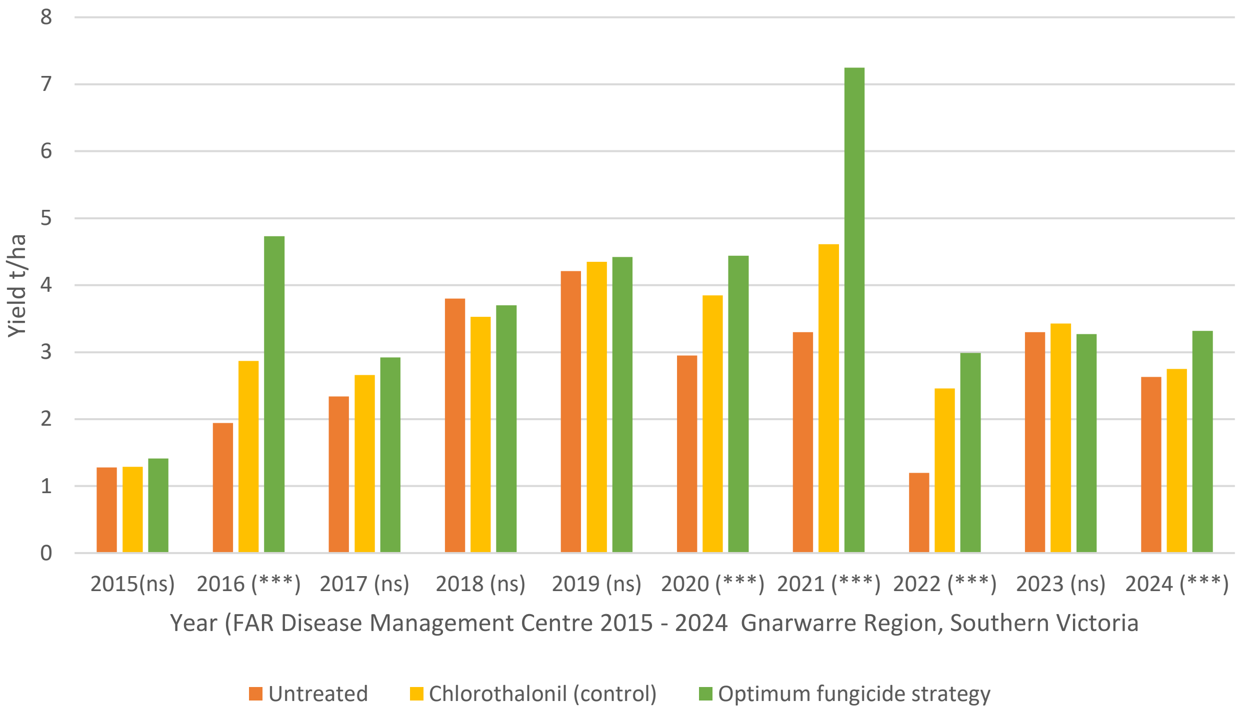

Figure 1. Yield response (t/ha) to fungicide (chlorothalonil control & best treatment in trial each applied as 2 spray approach) in faba beans 2015 – 2024 – Gnarwarre, Southern Victoria HRZ. *** - Statically significant yield response

When should we apply fungicides in the canopy to offer the greatest return on yield? Whilst we know a reasonable amount about the disease and the conditions for infection, we probably know less about exactly which parts of the plant are most important to protect from disease in comparison to wheat and barley. The "critical period" for faba bean development when seed number and yield formation is being determined is the period just after flowering (1-3 weeks) (Fakir 1997; Biswas et al. 2005; Mondal 2007).

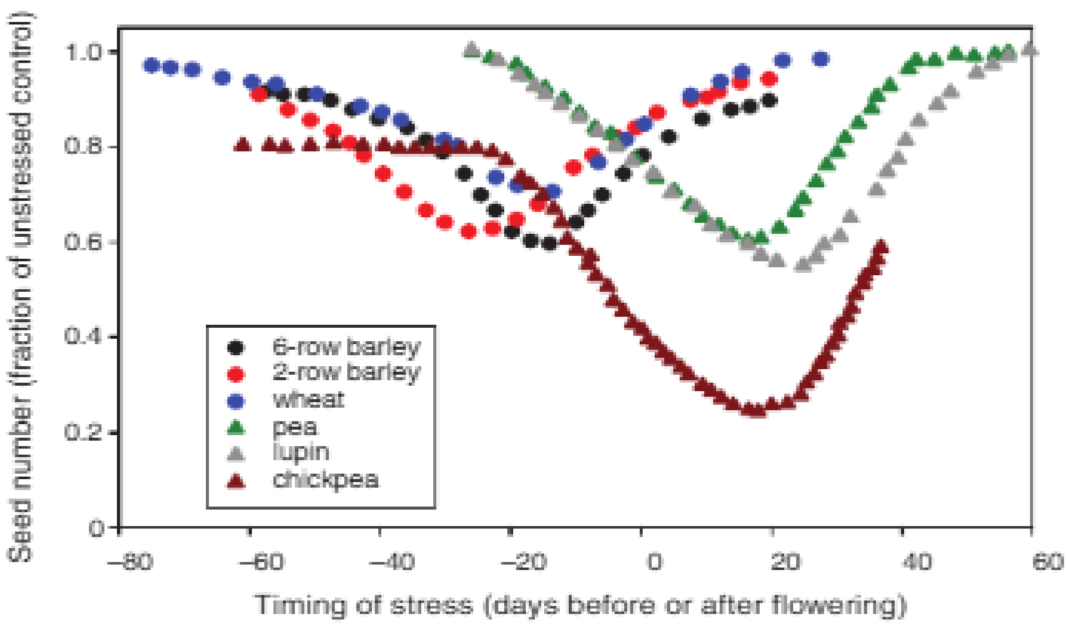

Figure 2. Critical period of seed number determination of winter cereals and pulses. V. Sadras and M. F. Dreccer (2015) Crop & Pasture Science 66(11):1137-1150

Protecting and feeding faba beans during the critical period

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Regarding applying a fungicide at a particular phenology stage, the evidence suggests that in a moderate disease year mid flowering (14 days after first flower) /early pod set are the most important fungicide timings (Table 1), with additional timings before and after dependent either on the season or specific pathogen issues. The importance of these key timings has been shown in trials where two spray approaches targeting these phenology stages have produced some of the best yields (average for both varieties).

Table 1. Influence of faba bean cultivar and disease management on grain yield (t/ha) at Gnarwarre 2024.

					Grain Yield (t/ha)					
Trt	4th node	**1st flower**	**1st flower +14 days**	**1st flower +28 days**	**PBA Amberly (MR)**		**PBA Bendoc (S)**		**Mean**	
1	---	---	---	---	3.24	-	2.83	-	3.03	**c**
2	---	---	---	Chlorothalonil +Carbendazim	3.33	-	3.07	-	3.20	**bc**
3	---	---	Chlorothalonil +Carbendazim	Chlorothalonil +Carbendazim	3.54	-	3.45	-	3.50	**a**
4	---	Mancozeb +Procymidone	Chlorothalonil +Carbendazim	Chlorothalonil +Carbendazim	3.43	-	3.34	-	3.38	**ab**
5	Tebuconazole	Mancozeb +Procymidone	Chlorothalonil +Carbendazim	Chlorothalonil +Carbendazim	3.41	-	2.95	-	3.18	**bc**
6	---	---	Miravis Star	---	3.26	-	3.35	-	3.30	**abc**
7	---	---	Miravis Star	Veritas	3.29	-	3.12	-	3.21	**bc**
8	Tebuconazole	Mancozeb	Miravis Star	Chlorothalonil +Carbendazim	3.35	-	2.88	-	3.11	**bc**
Mean					**3.35**	**-**	**3.12**	**-**		
Cultivar LSD p=0.05					0.27		**P val**		<0.001	
Fungicide Strategy LSD p=0.05					0.96		**P val**		ns	
Cultivar x Fungicide LSD p=0.05					0.38		**P val**		ns	

Tebuconazole applied at 145ml/ha, Mancozeb 750 at 2.00kg/ha, Procymidone 240g/ha, Chlorothalonil at 2.30L/ha, Carbendazim at 0.50L/ha, Miravis Star at 1/ha and Veritas at 0.75L/ha.

Thinking critically about the critical period with nutrition application.

Fact sheets describing the requirements for phosphorus in faba beans often vaguely suggest a figure such as “6kg/ha of phosphorus for every tonne of grain expected to be harvested”. But like all management decisions with faba beans, realising these yield expectations with the challenges of the seasons can make upfront commitments difficult and costly. It is often overlooked how the timing and choice of applied nutrition effects the plant components that contribute to yield, that is to say – **how can we strategically apply nutrition to target and support the plant components that contribute to yield?**

Experiments in a below average rainfall year in 2024 demonstrate how additional phosphorus applied at sowing can set the plant up to target higher yield. Although the dry season in 2024 made the additional phosphorus uneconomic, there was an alteration in plant architecture with an additional 50 kg/ha P showing a trend of increased branching, plant height, and pods; and statistically significant effects on 100 seed weight, dry matter, and grain yield (table 2).

Furthermore, where additional nitrogen was applied without the extra P, there was either no or a negative effect on grain yield. But when applied with the additional P at sowing, 100 kg/ha N spread at the end of flowering yield higher than without any extra N.

Table 2. Influence of applied nutrition plant components and grain yield at harvest at Gnarwarre 2024.

	Treatment	Branches (m2)		Plant height (cm)		Pods (m2)		100SW (g)		DM (t/ha)		YIELD t/ha	
1	Untreated	50.3	-	67.3	-	117.2	-	72.8	c	7.9	bc	3.58	de
2	100kg/ha N (sowing)	52.8	-	68.3	-	125.6	-	78.1	a	9.5	ab	3.53	e
3	100kg/ha N (start flower)	52.5	-	68.9	-	113.3	-	77.0	ab	7.0	c	3.76	cd
4	100kg/ha N (end of flower)	62.0	-	69.9	-	121.1	-	76.4	ab	9.5	ab	3.44	e
5	50kg/ha P (sowing)	50.8	-	71.7	-	121.1	-	78.0	a	8.4	bc	3.86	bc
6	50P (sowing) + 100N (sowing)	58.8	-	72.6	-	121.1	-	78.3	a	9.5	ab	4.02	ab
7	50P (sowing) + 100N (flower)	66.0	-	73.4	-	118.9	-	77.4	ab	10.6	a	4.01	ab
8	50P (sowing)+ 100N (end flower)	62.0	-	75.7	-	151.1	-	74.5	bc	9.8	ab	4.17	a
Grand Mean		56.9		71.0		123.7		3.3		9.0		3.80	
LSD P=.05		12.5		5.9		22.8		3.0		2.1		0.22	
Treatment Prob(F)		0.099		0.096		0.071		0.026		0.045		<0.001	
CV												3.92	

22 kg/ha P (100 kg MAP) applied in furrow under all treatments before addition nutrition was added as per treatment list.

Acknowledgements

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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.

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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/

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.

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FAR AUSTRALIA

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