INDUSTRY INNOVATIONS: PROVISIONAL HARVEST YIELD RESULTS – May Sown Barley

2025 NSW Crop Technology Centre (Daysdale)

Sown: 7 May 2025
Harvested: 19 November 2025
FAR trial code: FAR NSW B25-74
Growing season rainfall: 188.9mm
Rotation position: 2024 – Canola hay, 2023 – Barley
Soil type & management: Acidic red loam; soil was mixed with tine and scarifying points prior to sowing (Acid throttle management)

The Germplasm Evaluation Network (GEN) is a FAR Australia 'Industry Innovations' initiative that tests crop variety performance across FAR Australia's national network of Crop Technology Centres. GEN sites test variety performance with and without fungicide. FAR Australia provides the control varieties and breeders enter their chosen lines for evaluation.

Objectives

To assess the yield performance of a range of barleys, managed with and without fungicide against four regional controls (Minotaur, Neo, RGT Planet, and Rosalind), sown in late April/May in the Daysdale (NSW) medium rainfall environment.

Key Points

- *There was very little disease pressure in the trial which has resulted in no statistical yield response to the two spray programme of applied foliar fungicides.*
- *There were significant yield differences between varieties, with Rosalind and AGT Bunyip IA (tested as AGTB 0530) being the highest yielding varieties at 4.11 and 3.94t/ha respectively.*
- *Erect canopy structure and slightly earlier maturity were features noted with the two highest yielding varieties.*
- *Grain protein was high with levels varying from 15.8% to 18%. There was no fungicide impact on grain protein but there were significant differences between varieties with RP19034 having the highest and Neo having the lowest.*
- *Grain quality overall was poor with low retention (5.5-22.4%), high screenings (23.2-39.8%), and low test weights (55.2-65.0kg/hL) which is indicative of the low rainfall season experienced in 2025.*
- *Spot form net blotch, net form net blotch and scald were all present in the trial, albeit at low levels, with RGT Planet having the highest levels of infection (4.0%, 6.4%, and 7.5% plot infection respectively).*

Yield (t/ha) & quality data (% protein, test weight, % retention, % screenings)

Table 1. Influence of fungicide application on the grain yield (t/ha) of barley varieties plus and minus fungicide.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	Yield t/ha		**Yield t/ha**		**Yield t/ha**	
RGT Planet	2.94	-	3.01	-	**2.97**	**e**
Neo CL	3.19	-	3.32	-	**3.26**	**cd**
Minotaur	3.50	-	3.73	-	**3.61**	**b**
Rosalind	4.05	-	4.17	-	**4.11**	**a**
AGT Bunyip IA (AGTB 0530)	3.99	-	3.89	-	**3.94**	**a**
RAGT Atlantis	3.14	-	3.27	-	**3.21**	**cd**
RAGT Asteroid	2.99	-	3.35	-	**3.17**	**d**
RP19034	3.41	-	3.35	-	**3.38**	**c**
RP21011	2.79	-	2.87	-	**2.83**	**e**
Mean	**3.33**	**-**	**3.44**	**-**		
LSD Cultivar p = 0.05	0.20			**P value**	<0.001	
LSD Management p = 0.05	ns			**P value**	0.512	
LSD Cultivar x Man. p = 0.05	ns			**P value**	0.452	

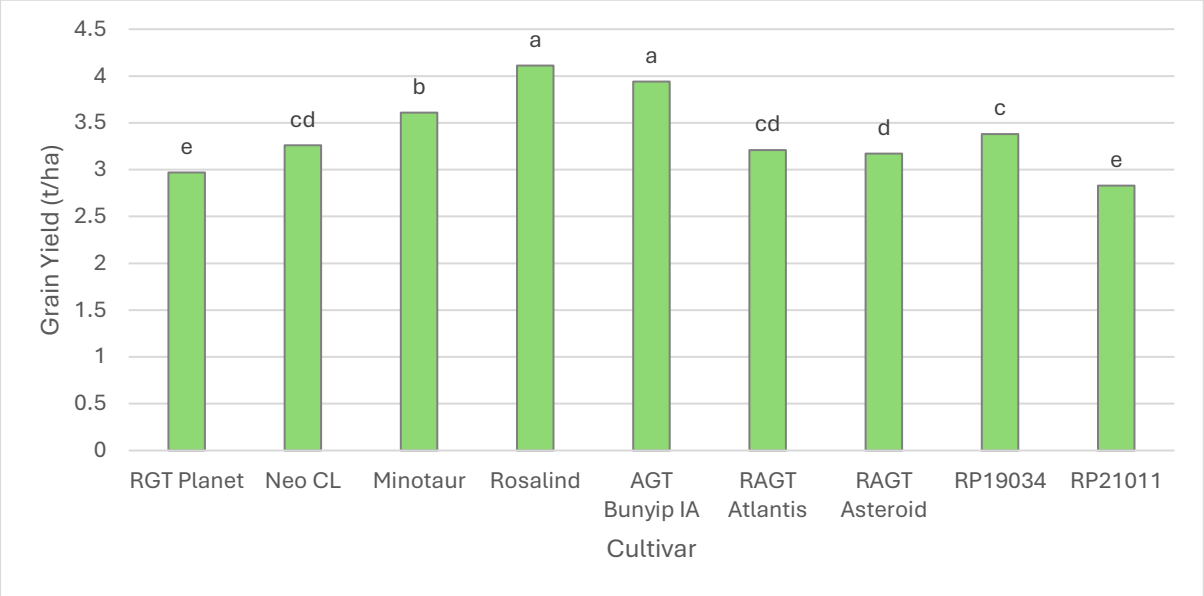

Figure 1. Influence of variety on the grain yield (t/ha) of barley varieties. LSD=0.20, p<0.001.

Table 2. Influence of fungicide application on grain quality (protein – corrected to 0% moisture, starch, fibre, test weight, retention and screenings) of barley variety plus and minus fungicide.

		Grain Quality Assessments											
Fungicide Management		**Protein (%)**		**Starch (%)**		**Fibre (%)**		**Test Weight (kg/hL)**		**Retention (%)**		**Screenings (%)**	
1	Untreated	16.8	-	60.3	-	4.1	-	60.7	-	10.3	-	30.1	-
2	Full Fungicide	16.6	-	60.4	-	4.0	-	60.8	-	11.5	-	31.5	-
	Pval	0.152		0.344		0.362		0.965		0.484		0.566	
	LSD P=.05	ns		ns		ns		ns		ns		ns	
Cultivar		**Protein (%)**		**Starch (%)**		**Fibre (%)**		**Test Weight (kg/hL)**		**Retention (%)**		**Screenings (%)**	
1	RGT Planet	16.7	cd	60.5	bc	4.1	cd	58.7	e	5.5	b	24.5	e
2	Neo CL	15.8	f	60.6	b	4.1	cd	55.2	f	7.0	b	23.2	e
3	Minotaur	16.8	c	61.2	a	3.7	f	63.1	c	9.3	b	38.2	ab
4	Rosalind	16.1	ef	59.8	de	4.1	bc	64.5	ab	22.4	a	35.3	bc
5	AGT Bunyip IA	16.1	ef	61.3	a	3.8	ef	65.0	a	21.9	a	39.8	a
6	RAGT Atlantis	17.0	bc	59.6	e	4.4	a	58.8	e	9.3	b	30.1	d
7	RAGT Asteroid	17.3	b	59.9	de	4.3	ab	61.6	d	7.5	b	32.0	cd
8	RP19034	18.0	a	60.4	bc	3.9	de	63.5	bc	8.1	b	30.6	d
9	RP21011	16.4	de	60.0	cd	4.3	ab	56.3	f	7.2	b	23.6	e
Grand Mean		**16.7**		**60.4**		**4.1**		**60.7**		**10.9**		**30.8**	
	Pval	<0.001		<0.001		<0.001		<0.001		<0.001		<0.001	
	LSD P=.05	0.4		0.5		0.2		1.3		3.9		3.8	

Disease assessments

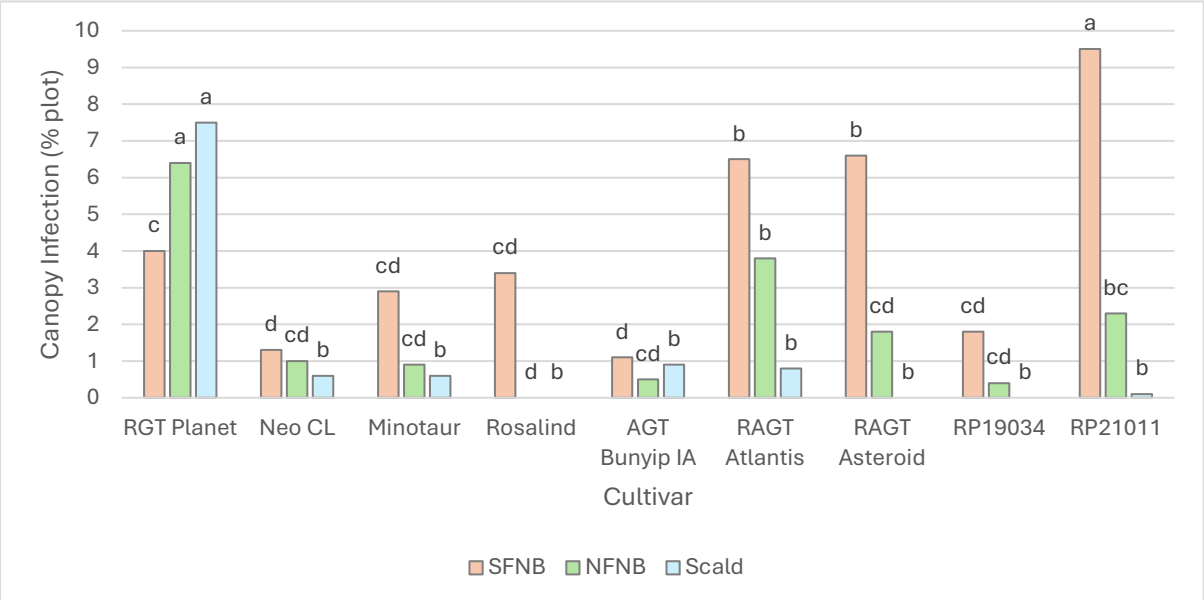

Figure 2. Influence of variety on spot form net blotch (SFNB), net form net blotch (NFNB), and scald plot infection (% plot) assessed 12 September. SFNB LSD=2.44 p<0.001, NFNB LSD=1.96 p<0.001, scald LSD=1.92 p<0.001.

Development (Phenology)

Table 3. Phenology assessments conducted throughout the growing season

	17-Jul	5-Aug	12-Sep
RGT Planet	25	30	41
Neo CL	25	30-31	45
Minotaur	25	31	41
Rosalind	26	31	51
AGT Bunyip IA	25	31	45
RAGT Atlantis	25	30	39
RAGT Asteroid	27	30-31	41
RP19034	25	30	39
RP21011	27	30	45

Trial inputs

Table 4. Trial input and management details.

Sowing date:		**7 May**	
Harvest date:		**19 November**	
Seed rate:		180 seeds/m^2	
Basal fertiliser:	7 May	80 kg MAP/ha	
Pre-em herbicide:	7 May	Treflan 2L/ha	
		Glyphosate 450 2L/ha	
		Boxer Gold 2.5L/ha	
Post-em herbicide:	23 July	Danadim 0.5L/ha	
	14 Aug	MCPA Amine 750 750mL/ha	
		Lontrel 750 SG 80g/ha	
		BS1000 0.2%	
Nitrogen:	23 July	Urea 217 kg/ha (100kg N/ha)	
	28 Aug	Urea 109 kg/ha (50kg N/ha)	
Fungicide:		**Untreated**	**Plus fungicide**
	GS31	----	Prosaro 300 mL/ha Wetter 1000 0.2%
	GS39	----	Revystar 750mL/ha

Meteorological Data

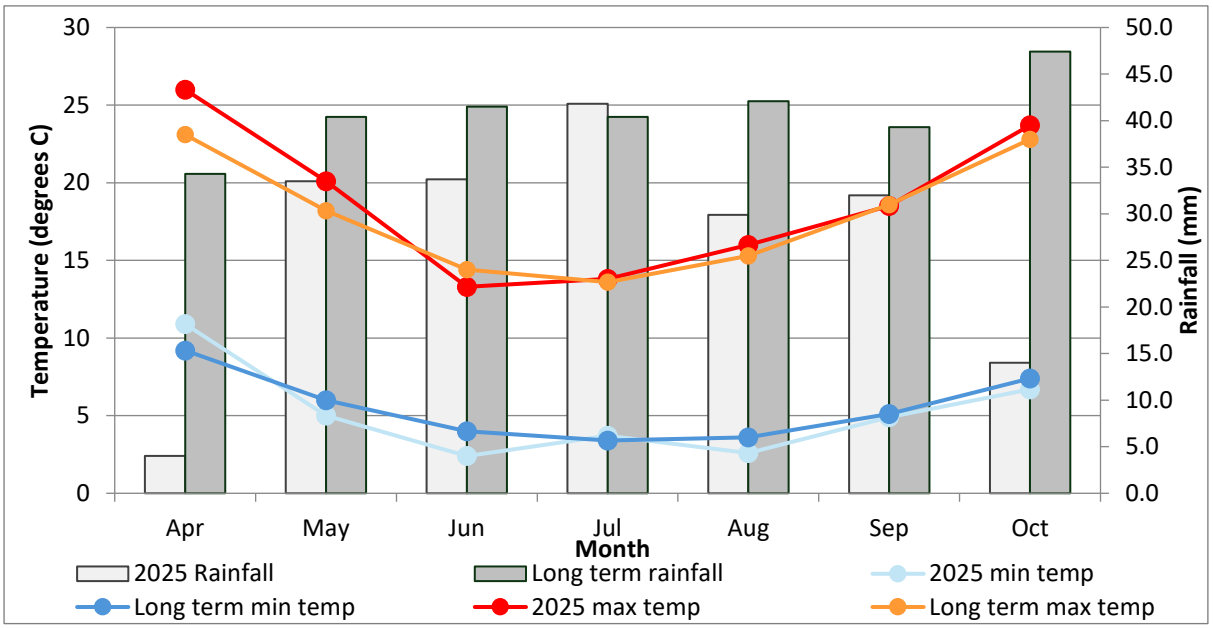

Figure 3. 2025 growing season rainfall recorded on site and long-term rainfall recorded at Oaklands General Store (1925 to 2025) and 2025 minimum and maximum temperatures and long-term mean recorded at Yarrawonga (1993 to 2025) for the growing season (April-October). *Rainfall April to October = 188.9mm*.

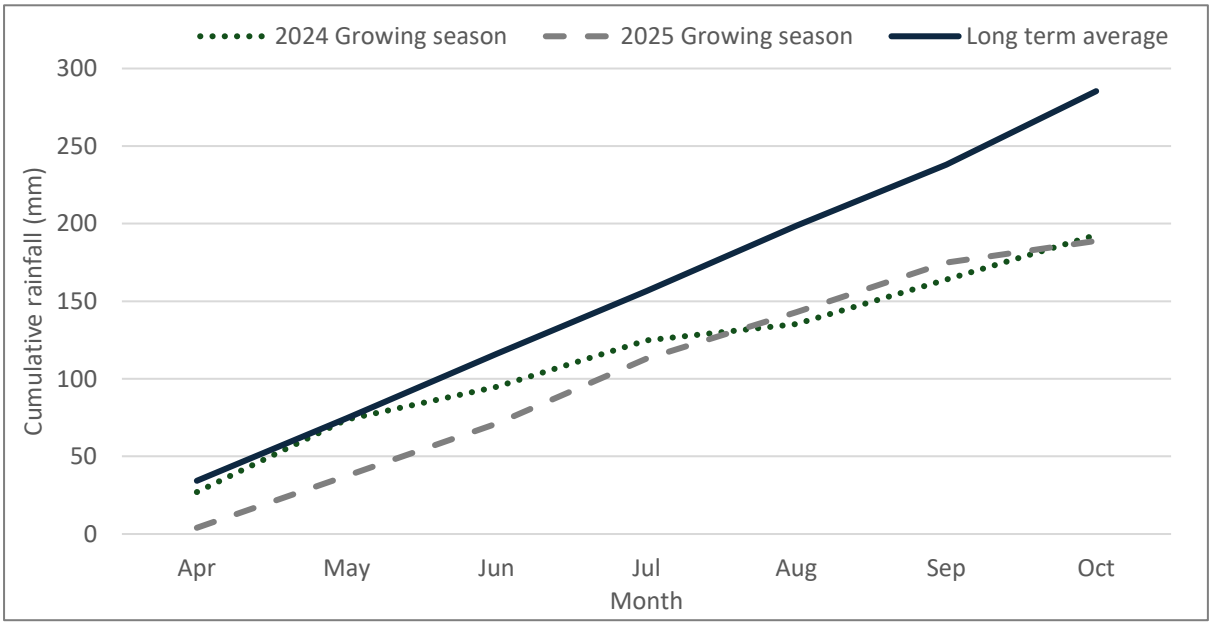

Figure 4. Cumulative growing season rainfall for 2024, 2025 and the long-term average recorded on site (2025) and at Oaklands General Store (2024 and long-term).

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