



Industry Innovations 2025



INDUSTRY INNOVATIONS 2025: PROVISIONAL HARVEST YIELD RESULTS – May sown barley 2023 WA Frankland River Crop Technology Centre

Sown: 17 May 2023

Harvested: 20 November 2023

Rotation position: 2022 Canola

Soil type & management: Forest gravel loam

The Germplasm Evaluation Network (GEN) is a FAR Australia 'Industry Innovations 2025' initiative that tests crop performance across FAR Australia's national network of Crop Technology Centres. GEN sites are situated in higher yielding regions of the country and test crop performance plus and minus fungicide. FAR Australia provides the control varieties and breeders enter their chosen lines for evaluation.

Objectives:

To assess the performance of eight spring barley varieties against two FAR control varieties RGT Planet (malt) and Rosalind (feed) managed with and without fungicide, sown mid-May, in the Frankland River (WA) environment.

Key Points:

- *Sown in mid-May, the highest yield was approximately 0.35t/ha lower than the highest barley yields recorded from the neighbouring 30 April sowing date (see April sown barley yield results).*
- *The highest yields in the trial were recorded with Firefox (5.88t/ha) and Neo (5.73t/ha) which were significantly higher yielding than all other varieties, except Rosalind and Minotaur, with Firefox being significantly better than Minotaur as well.*
- *Apart from RGT Planet (0.43t/ha) and RP19034 (0.95t/ha) (non-significant increases) which both suffered from net form of net blotch, grain yield responses to fungicide application (GS31 & GS49) were small.*
- *Laureate and IGB21130 were later developing varieties (early head emergence when other varieties were at full head emergence) and appeared to be impacted to greater extent by the drier conditions during October.*
- *Poorer yields were in general associated with longer season phenology lower test weights, higher screenings and lower retentions.*
- *There was an interaction (not significant $p=0.08$) between the influence of fungicide and variety on grain screenings, with varieties such as RP 19034 and RGT Planet showing large improvements in screening % when fungicides were applied, compared to other varieties such as Firefox.*
- *Overall, with the exception of NFNB in RGT Planet and RP 19034, disease levels were very low.*

Table 1. Influence of fungicide on the grain yield (t/ha) of barley cultivars plus and minus fungicide – May 17 sown.

	Management Level		
	Untreated	Full protection	Mean
Cultivar	Yield t/ha	Yield t/ha	Yield t/ha
RGT Planet (FAR Control)	4.39 -	4.72 -	4.55 cd
Rosalind (FAR Control)	5.51 -	5.69 -	5.60 ab
Laureate	4.31 -	4.46 -	4.39 d
Firefoxx	5.81 -	5.95 -	5.88 a
IGB21130	4.48 -	4.85 -	4.66 cd
IGB22102T (Neo)	5.75 -	5.72 -	5.73 ab
Minotaur	5.43 -	5.52 -	5.48 b
Asteroid	4.46 -	4.55 -	4.50 cd
RP 19034	4.35 -	5.30 -	4.83 c
RP 19013	4.62 -	5.03 -	4.82 c
Mean	4.91 -	5.18 -	5.04
LSD Cultivar p = 0.05	0.40	P val	<0.001
LSD Management p = 0.05	ns	P val	0.128
LSD Cultivar x Man. p = 0.05	ns	P val	0.470

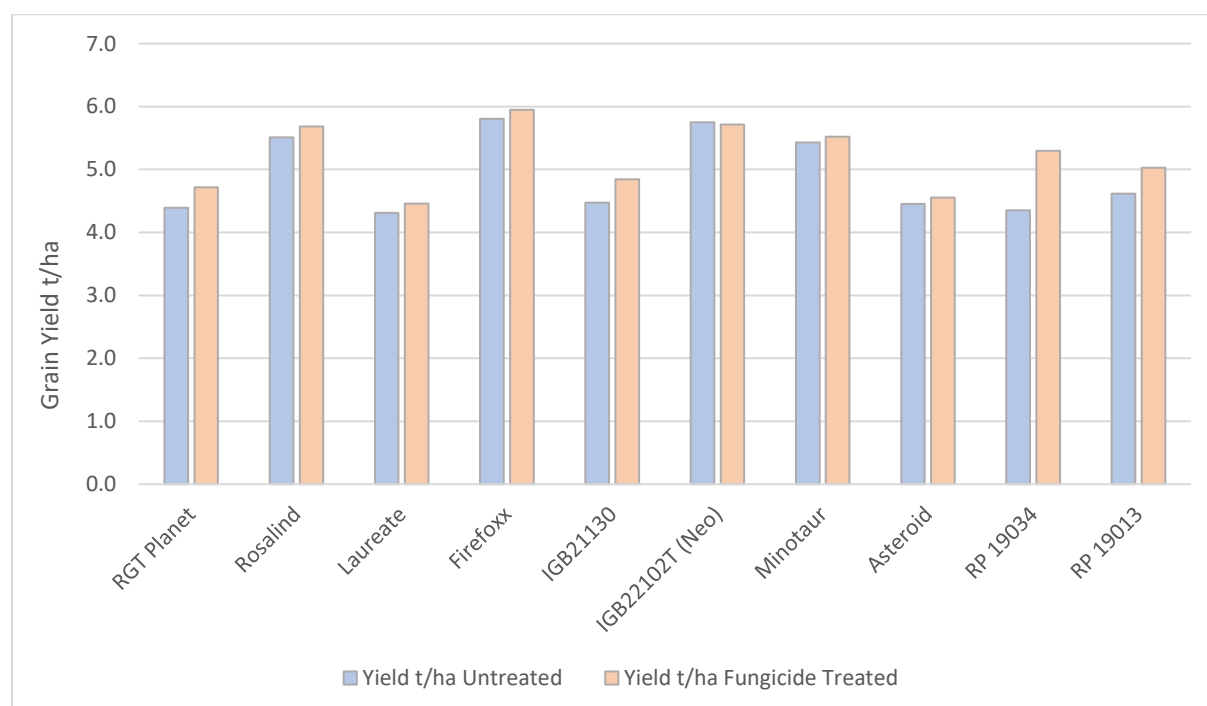


Figure 1. Influence of fungicide on the grain yield (t/ha) of barley cultivars plus and minus fungicide – May 17 sown.

Table 2. Influence of fungicide on the grain quality (protein, test weight, retentions, and screenings) of barley cultivars plus and minus fungicide.

				Grain quality assessments					
Cultivar		Protein (%)		Test Weight (kg/hL)		Retentions (%)		Screenings (%)	
1.	RGT Planet (FAR control)	11.3	-	55.9	b	65.7	b	8.9	b
2.	Rosalind (FAR Control)	11.7	-	61.9	a	81.8	a	3.9	c
3.	Laureate	11.3	-	50.5	d	60.8	bc	10.5	b
4.	Firefoxx	11.6	-	63.5	a	89.6	a	2.0	c
5.	IGB21130	11.1	-	51.7	cd	61.4	bc	12.1	ab
6.	IGB22102T (Neo)	11.2	-	56.0	b	84.0	a	3.8	c
7.	Minotaur	11.6	-	60.5	a	80.0	a	4.4	c
8.	Asteroid	11.2	-	51.3	cd	50.4	c	15.2	a
9.	RP 19034	11.7	-	53.4	bcd	64.1	b	11.0	ab
10.	RP 19013	11.7	-	53.8	bc	56.1	bc	13.1	ab
LSD = 0.05		ns		3.10		11.15		4.38	
Cultivar p-Value		0.112		<0.001		<0.001		<0.001	
Disease Management									
1.	No Fungicide	11.6	-	55.7	-	65.1	-	10.0	a
2.	Full Fungicide	11.3	-	56.0	-	73.7	-	7.0	b
LSD = 0.05		ns		ns		ns		2.99	
Disease Management p-Value		0.424		0.622		0.072		0.048	
Disease Pressure x Cultivar									
No Fungicide									
1.	RGT Planet (FAR control)	11.4	-	56.1	-	66.1	-	8.3	-
2.	Rosalind (FAR Control)	11.9	-	62.2	-	78.3	-	5.1	-
3.	Laureate	11.4	-	51.4	-	57.5	-	11.8	-
4.	Firefoxx	11.9	-	63.8	-	91.7	-	1.7	-
5.	IGB21130	11.2	-	53.9	-	57.4	-	13.0	-
6.	IGB22102T (Neo)	11.5	-	56.1	-	80.0	-	4.7	-
7.	Minotaur	11.6	-	59.3	-	74.5	-	5.9	-
8.	Asteroid	11.4	-	50.6	-	47.3	-	16.5	-
9.	RP 19034	11.8	-	50.2	-	47.0	-	18.2	-
10.	RP 19013	11.8	-	53.3	-	51.5	-	14.7	-
Full Fungicide									
1.	RGT Planet (FAR control)	11.3	-	55.7	-	65.2	-	9.4	-
2.	Rosalind (FAR Control)	11.5	-	61.7	-	85.3	-	2.7	-
3.	Laureate	11.3	-	49.6	-	64.2	-	9.2	-
4.	Firefoxx	11.4	-	63.1	-	87.4	-	2.2	-
5.	IGB21130	11.0	-	49.4	-	65.4	-	11.2	-
6.	IGB22102T (Neo)	11.0	-	55.9	-	88.1	-	2.9	-
7.	Minotaur	11.6	-	61.8	-	85.5	-	2.8	-
8.	Asteroid	11.0	-	52.1	-	53.6	-	13.9	-
9.	RP 19034	11.6	-	56.6	-	81.1	-	3.9	-
10.	RP 19013	11.7	-	54.3	-	60.8	-	11.5	-
LSD = 0.05		ns		ns		ns		ns	
Cultivar x Disease Manq. p-Value		0.990		0.106		0.121		0.080	

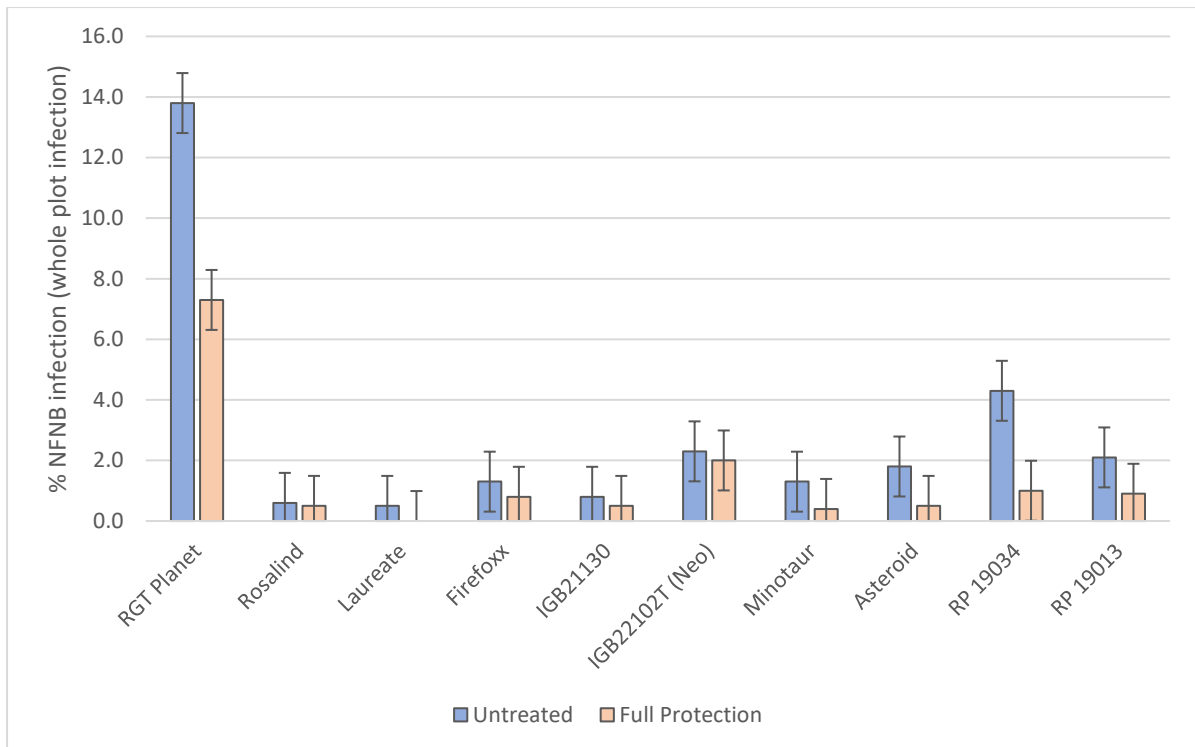


Figure 2. Net Form of Net Blotch (NFNB) disease severity assessed 15 September – based on whole plot infection.

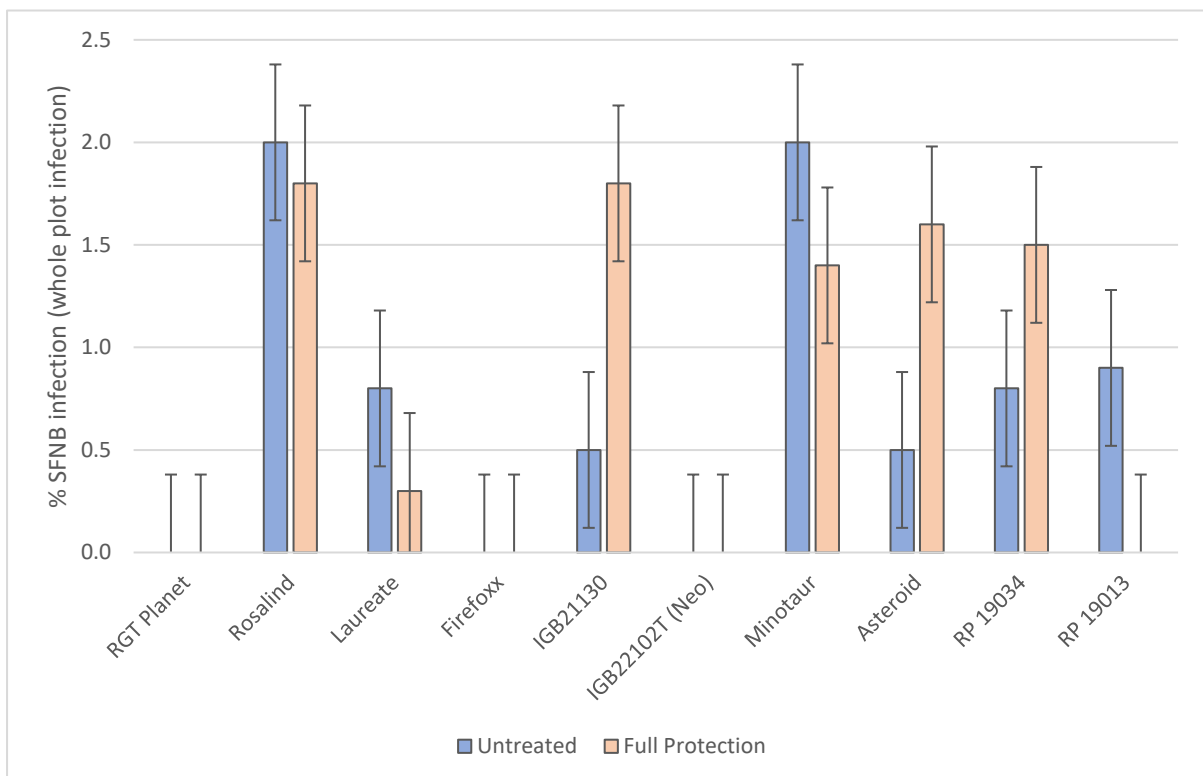


Figure 3. Spot Form of Net Blotch (SFNB) disease severity assessed 15 September – based on whole plot infection.

Table 3. Trial input and management details (kg, g, ml/ha).

Sowing date:	17 May		
Harvest date:		20 November	
Seed rate:		180 seeds/m ² (Vibrance & Cruiser Opti treated)	
Basal fertiliser:	17 May	169kg MAP/MOP/MnSO ₄ (66/29/5 divide)	
Herbicide:	17 May	Triflurex 2L/ha	
		Overwatch 1.25L/ha	
	30 Jun	MCPA amine 750 0.6L/ha (post em)	
Insecticide	30 Jun	Trojan 10mL/ha (post em)	
Nitrogen:	12 Jun	55 kg N/ha	
	13 Jul	32 kg N/ha	
	2 Aug	23 kg N/ha	
Fungicide:		Full Fungicide Program	No Fungicide Program
	GS31	Prosaro 0.30 L/ha	---
	GS39-51	Radial 0.84 L/ha	---
PGR:		nil	

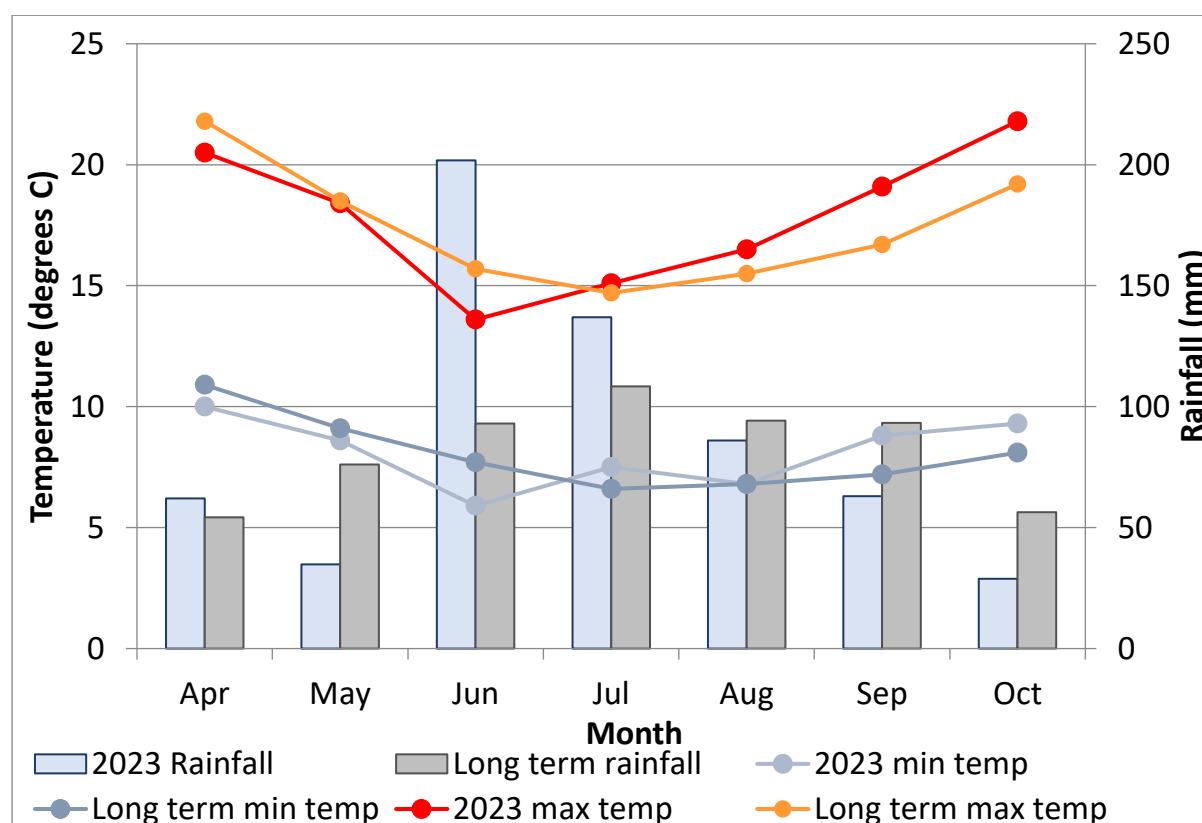


Figure 4. 2023 growing season rainfall, long-term rainfall, 2023 min and max temperatures, and long-term temperatures recorded at Rocky Gully (1996-2023). *Growing season rainfall April to October= 613 mm.*