



**Industry
Innovations
2025**

INDUSTRY INNOVATIONS: PROVISIONAL HARVEST YIELD RESULTS – September Sown Barley

2023 Tasmania Crop Technology Centre

Sown: 7 September 2023

Harvested: 26 January 2024

Rotation position: First cereals after poppies

Soil type & management: Chromosol

The Germplasm Evaluation Network (GEN) is a FAR Australia Industry Innovations 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 five spring barley varieties against two FAR control varieties RGT Planet (malt) and Rosalind (feed) plus and minus fungicide in the northern midlands (HRZ) of Tasmania (Hagley).

Key Points:

- *Yields ranged from 9.57 – 12.07t/ha depending on variety and fungicide treatment.*
- *There was a significant response to fungicide (which averaged 0.42t/ha across the varieties), principally as a result of net form of net blotch (NFNB) infection (depending on variety).*
- *NFNB infection was most significant in RGT Planet and FAR SB2.*
- *The coded European barleys FAR SB2, FAR SB1, and FAR SB5 were significantly higher yielding than all other varieties tested (except AGTB0318), with each of these varieties exceeding 11.8t/ha when treated with fungicide.*
- *Varieties did vary in grain quality (protein, retentions, screenings), but differences were relatively small.*
- *Brackling was highest in Rosalind and lodging was highest in AGTB0318, but neither was a major issue in the trial.*
- *Minotaur and Rosalind were the lowest yielding of treated crops; these shorter season Australian varieties which are photoperiod sensitive appeared less able to capitalise on the ideal growing conditions.*

Table 1. Influence of fungicide on the grain yield (t/ha) of barley cultivars plus and minus fungicide – 26 January harvested.

Cultivar	Management Level		
	Untreated	Full protection	Mean
	Yield t/ha	Yield t/ha	Yield t/ha
RGT Planet	10.89 -	11.80 -	11.34 c
Rosalind	11.29 -	11.34 -	11.31 c
AGTB0318	11.17 -	11.83 -	11.50 bc
Minotaur	9.57 -	9.92 -	9.74 d
FAR SB2	11.38 -	11.81 -	11.60 abc
FAR SB1	11.54 -	12.07 -	11.81 ab
FAR SB5	11.94 -	11.91 -	11.93 a
Mean	11.11 b	11.53 a	11.32
LSD Cultivar p = 0.05	0.41	P val	<0.001
LSD Management p = 0.05	0.30	P val	0.021
LSD Cultivar x Man. p = 0.05	ns	P val	0.290

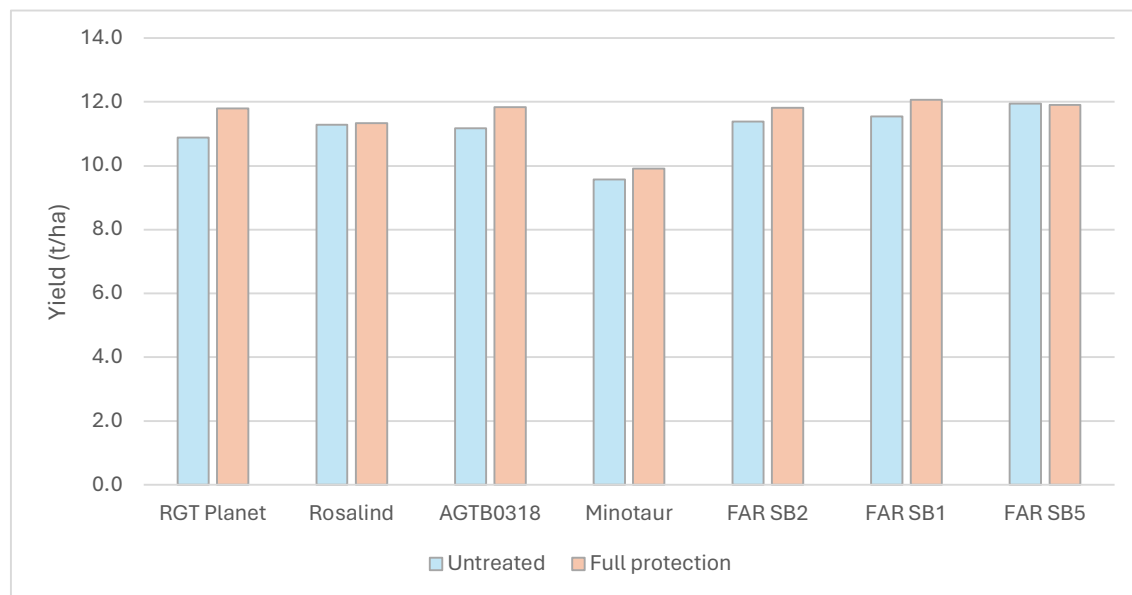


Figure 1. Influence of fungicide on the grain yield (t/ha) of barley cultivars plus and minus fungicide – 7 September sown

Table 2. Influence of fungicide on the protein (%) and test weights (kg/hL) of barley cultivars plus and minus fungicide – 26 January harvested.

	Management Level							
	Untreated	Full protection		Mean	Untreated	Full protection		Mean
Cultivar	Protein %	Protein %	Protein %	Protein %	Test weight kg/hL	Test weight kg/hL	Test weight kg/hL	Test weight kg/hL
RGT Planet	12.0 -	11.6 -	11.8	b	65.1 -	65.3 -	65.2	b
Rosalind	12.8 -	12.4 -	12.6	a	65.6 -	66.3 -	66.0	ab
AGTB0318	12.3 -	12.0 -	12.1	b	63.1 -	63.2 -	63.2	c
Minotaur	12.5 -	12.7 -	12.6	a	66.2 -	66.1 -	66.1	a
FAR SB2	12.0 -	11.8 -	11.9	b	65.2 -	65.8 -	65.5	ab
FAR SB1	12.1 -	11.8 -	11.9	b	64.9 -	66.2 -	65.5	ab
FAR SB5	11.5 -	11.5 -	11.5	c	65.4 -	66.0 -	65.7	ab
Mean	12.2	12.0	12.1		65.1	65.6	65.3	
Cultivar	LSD p = 0.05	0.34	P val	<0.001	LSD p = 0.05	0.84	P val	<0.001
Management	LSD p = 0.05	ns	P val	0.408	LSD p = 0.05	ns	P val	0.225
Cultivar x Man.	LSD p = 0.05	ns	P val	0.467	LSD p = 0.05	ns	P val	0.675

Table 3. Influence of fungicide on the retention (% > 2.5mm) and screenings (% < 2.2mm) of barley cultivars plus and minus fungicide – 26 January harvested.

	Management Level							
	Untreated	Full protection		Mean	Untreated	Full protection		Mean
Cultivar	Retention %	Retention %	Retention %	Retention %	Screenings %	Screenings %	Screenings %	Screenings %
RGT Planet	92.2 -	93.4 -	92.8	cd	2.0 -	1.7 -	1.9	ab
Rosalind	92.7 -	92.4 -	92.5	d	2.0 -	2.1 -	2.0	a
AGTB0318	94.8 -	95.5 -	95.1	ab	1.7 -	1.3 -	1.5	bc
Minotaur	93.6 -	94.7 -	94.2	bc	2.0 -	1.8 -	1.9	ab
FAR SB2	92.2 -	94.1 -	93.2	cd	2.0 -	1.4 -	1.7	abc
FAR SB1	95.6 -	96.9 -	96.2	a	1.3 -	0.9 -	1.1	d
FAR SB5	93.8 -	94.8 -	94.3	bc	1.5 -	1.3 -	1.4	cd
Mean	93.6	94.5	94.0		1.8	1.5	1.6	
Cultivar	LSD p = 0.05	1.57	P val	<0.001	LSD p = 0.05	0.42	P val	<0.001
Management	LSD p = 0.05	ns	P val	0.079	LSD p = 0.05	0.29	P val	0.047
Cultivar x Man.	LSD p = 0.05	ns	P val	0.872	LSD p = 0.05	ns	P val	0.703

Table 4. Influence of fungicide and cultivar on crop lodging (0-500) and brackling (%) - assessed 26 January.

	Management Level									
	Untreated		Full protection		Mean	Untreated		Full protection		Mean
Cultivar	Lodging (0-500)		Lodging (0-500)		Lodging (0-500)	Brackling (%)		Brackling (%)		Brackling (%)
RGT Planet	46.3	-	50.0	-	48.1 ab	27.5	-	18.8	-	23.1 ab
Rosalind	28.8	-	66.3	-	47.5 ab	45.0	-	22.5	-	33.8 a
AGTB0318	105.0	-	60.0	-	82.5 a	16.3	-	21.3	-	18.8 bc
Minotaur	5.0	-	5.0	-	5.0 c	13.8	-	5.0	-	9.4 c
FAR SB2	51.3	-	86.3	-	68.8 a	21.3	-	16.3	-	18.8 bc
FAR SB1	27.5	-	15.0	-	21.3 bc	17.5	-	10.0	-	13.8 bc
FAR SB5	35.0	-	15.0	-	25.0 bc	13.8	-	13.8	-	13.8 bc
Mean	42.7	-	42.5	-	42.6	22.1	-	15.4	-	18.8
Cultivar	LSD p = 0.05		35.1	P val <0.001		LSD p = 0.05		11.2	P val 0.003	
Management	LSD p = 0.05		ns	P val 0.986		LSD p = 0.05		ns	P val 0.210	
Cultivar x Man.	LSD p = 0.05		ns	P val 0.223		LSD p = 0.05		ns	P val 0.326	

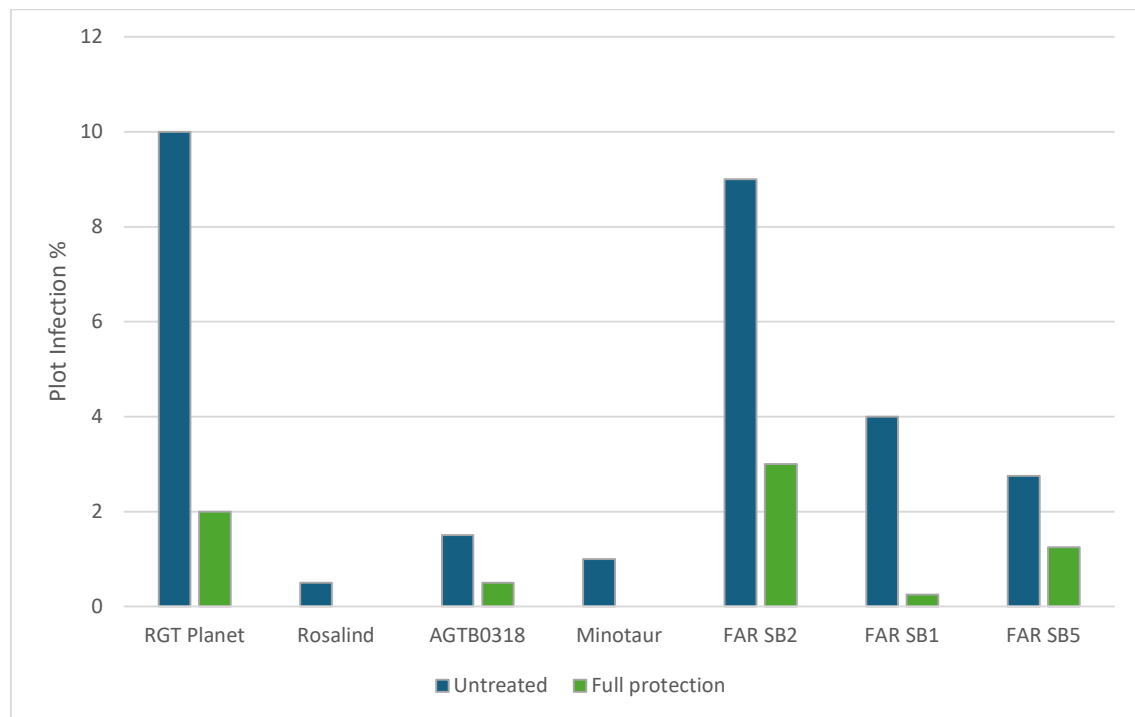


Figure 2. Influence of fungicide and cultivar on the plot infection % of net form of net blotch (NFNB) – assessed 6 December, GS75-83. Cultivar P value = 0.007, LSD = 2.4, Management P value = 0.295, Cult. x Man. P value= 0.162.

Table 5. Trial input and management details (kg, g, ml/ha).

Sowing date:	6 September		
Harvest date:	26 January		
Seed rate:	180 seeds/m ²		
Basal fertiliser:	100 kg MAP		
Nitrogen:	17 Oct	92 kg N/ha	
Fungicide:		Untreated	Full Protection
	GS31	----	Prosaro 0.30 L/ha
	GS39	----	Aviator Xpro 0.42 L/ha

Meteorological Data

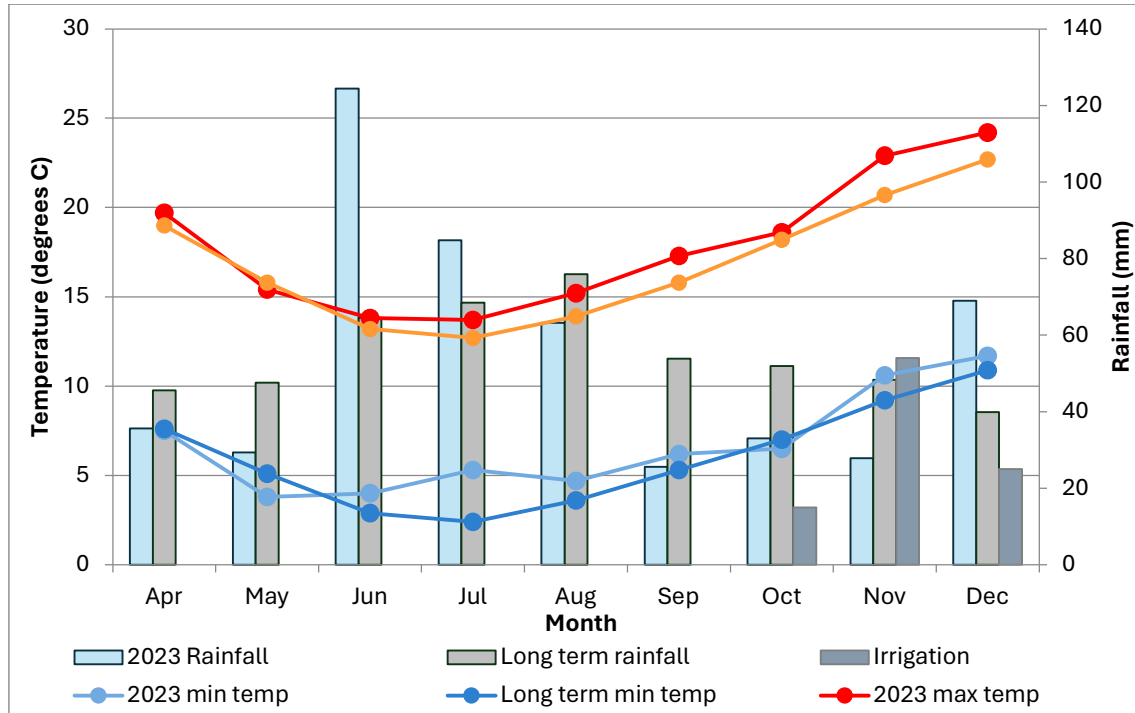


Figure 5. 2023 growing season rainfall and long-term rainfall recorded at Strathbridge (Meander River) (1985 -2023) and long-term min and max temperatures recorded at Launceston (Ti Tree Bend) (1980 to 2023) for the growing season (April to December). *Rainfall and irrigation August to December= 312.6mm.*