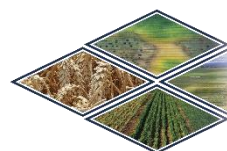




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SA CROP
TECHNOLOGY
CENTRE

INDUSTRY INNOVATIONS 2025: PROVISIONAL HARVEST RESULTS – May Sown Barley

2025 SA Bordertown Crop Technology Centre (MRZ)

Sown: 14 May 2025

Harvested: 15 December 2025

Soil type & management: Dark grey medium
clay (Wolseley soil), stubble incorporated

Previous Crop(s): 2023-Chickpeas; 2024-Canola

FAR Code: FAR MSA B25-64

GSR (Apr-Nov): 368mm

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 barley cultivars, managed with and without fungicide against three regional controls (RGT Planet, Neo CL & Minotaur), sown in mid-May in the South Australian Medium Rainfall Zone (MRZ).

Key Points:

- *Despite no significant interaction between fungicide and cultivar, Neo CL yielded almost 1t/ha more with the 2 spray fungicide program than untreated.*
- *Statistically significant differences between varieties were observed with Neo CL as the top yielding cultivar (9.17t/ha) when averaged across untreated and plus fungicide.*
- *Test weight (64.8kg/hL) was a limiting factor for malting variety RGT Planet without fungicide limiting it to feed BAR1 class. Plus fungicide RGT Planet and plus and minus fungicide Neo CL and Minotaur all achieved malt 1 class.*

	Untreated	Plus Fungicide
RGT Planet	Feed Barley- BAR1	Malting Barley-PL1
Neo CL	Malting Barley-NE1	Malting Barley-NE1
Minotaur	Malting Barley-MN1	Malting Barley-MN1

Protein, screenings, retention were not a limiting factor for “malting” bin grade irrespective of cultivar.

- *NFNB was the dominant disease within the trial and had a significant interaction between cultivar and fungicide, affecting RGT Atlantis untreated (28.8%) and plus fungicide (14.3%) the most.*
- *For scald infection averaged over untreated and plus fungicide, RGT Atlantis had the highest plot infection level (7.1%), being closely followed by RGT Planet (5.8%), AGFBA061025 (5.5%) and Minotaur (4.3%).*
- *Low levels of SFNB (<2% plot infection) were observed with no statistically significant differences between untreated and plus fungicide.*
- *Untreated Minotaur had low levels of leaf rust (0.1%) followed by untreated Neo CL (0.03%).*
- *When averaged, Neo CL had the statistically higher levels of loose smut (1.0%), followed by Minotaur (0.1%). No other incidence of loose smut was observed throughout the trial.*

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

There were significant differences in yield and quality due to variety (P Value<0.001), but no response to fungicide management or interaction between variety and fungicide management except for the retention %, where significant interactions were also noted (Tables 1-5 & Figure 1).

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

		Yield t/ha		
Variety		Untreated	Plus fungicide	Mean
1.	RGT Planet	7.85 -	8.41 -	8.13 cd
2.	Neo CL	8.72 -	9.63 -	9.17 a
3.	Minotaur	8.11 -	8.43 -	8.27 cd
4.	AGFBA061025	8.48 -	8.89 -	8.68 b
5.	AGFBA071025	8.06 -	8.43 -	8.24 cd
6.	AGFBA071225	8.25 -	8.61 -	8.43 bc
7.	AGT-Bunyip IA (AGTB0530)	6.73 -	7.14 -	6.94 f
8.	RGT Atlantis	7.85 -	8.20 -	8.02 de
9.	RGT Asteroid	8.20 -	8.36 -	8.28 cd
10.	RP19034	7.77 -	7.80 -	7.79 e
11.	RP21011	8.32 -	8.95 -	8.63 b
Mean		8.03 -	8.44 -	8.24
LSD Cultivar p = 0.05		0.34	P value	<0.001
LSD Management p = 0.05		ns	P value	0.051
LSD Cultivar x Man. p = 0.05		ns	P value	0.501

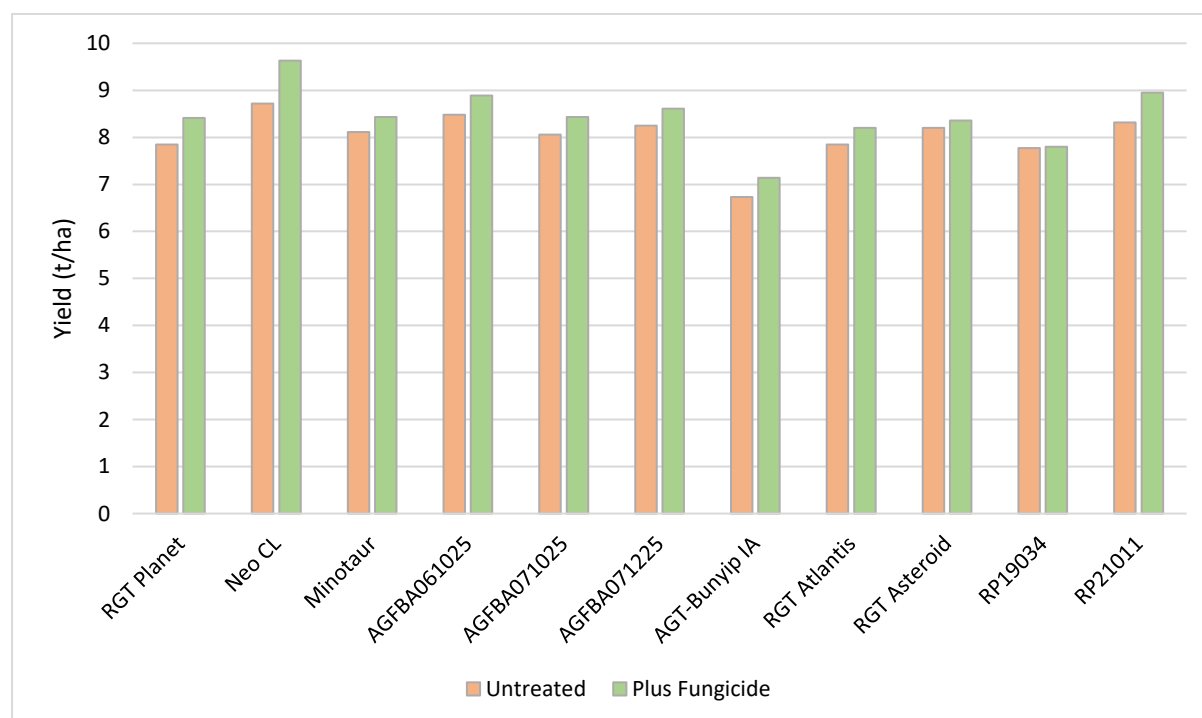


Figure 1. Influence of cultivar and fungicide application on grain yield (t/ha) (P-Value=0.501, LSD =0.47).

Table 2. Influence of fungicide application on protein (%) of barley cultivars plus and minus fungicide.

		Protein %		
Variety		Untreated	Plus fungicide	Mean
1.	RGT Planet	11.6 -	11.4 -	11.5 bc
2.	Neo CL	11.2 -	10.7 -	11.0 d
3.	Minotaur	11.7 -	11.6 -	11.6 b
4.	AGFBA061025	11.7 -	11.2 -	11.4 bc
5.	AGFBA071025	11.9 -	11.1 -	11.5 bc
6.	AGFBA071225	11.5 -	11.1 -	11.3 bcd
7.	AGT-Bunyip IA (AGTB0530)	12.2 -	12.0 -	12.1 a
8.	RGT Atlantis	11.7 -	11.7 -	11.7 ab
9.	RGT Asteroid	11.5 -	11.6 -	11.5 bc
10.	RP19034	11.8 -	11.7 -	11.7 ab
11.	RP21011	11.3 -	11.1 -	11.2 cd
Mean		11.6 -	11.4 -	11.5
LSD Cultivar p = 0.05		0.4	P value	<0.001
LSD Management p = 0.05		1.0	P value	0.475
LSD Cultivar x Man. p = 0.05		0.6	P value	0.676

Table 3. Influence of fungicide application on test weight (kg/hL) of barley cultivars plus and minus fungicide.

		Test Weight kg/hL		
Variety		Untreated	Plus fungicide	Mean
1.	RGT Planet	64.8 -	65.6 -	65.2 def
2.	Neo CL	67.4 -	68.9 -	68.1 b
3.	Minotaur	70.2 -	70.6 -	70.4 a
4.	AGFBA061025	65.0 -	66.2 -	65.6 cde
5.	AGFBA071025	64.3 -	65.6 -	64.9 efg
6.	AGFBA071225	64.3 -	65.5 -	64.9 efg
7.	AGT-Bunyip IA (AGTB0530)	71.4 -	71.4 -	71.4 a
8.	RGT Atlantis	62.8 -	64.9 -	63.9 g
9.	RGT Asteroid	65.3 -	66.9 -	66.1 cd
10.	RP19034	66.5 -	66.6 -	66.5 c
11.	RP21011	62.8 -	65.5 -	64.2 fg
Mean		65.9 -	67.0 -	66.5
LSD Cultivar p = 0.05		1.2	P value	<0.001
LSD Management p = 0.05		1.7	P value	0.130
LSD Cultivar x Man. p = 0.05		1.6	P value	0.450

Table 4. Influence of fungicide application on retention (%) of barley cultivars plus and minus fungicide.

		Retention %		
Variety		Untreated	Plus fungicide	Mean
1.	RGT Planet	83.5 fg	87.7 d-g	85.6 e
2.	Neo CL	90.3 a-d	94.5 abc	92.4 ab
3.	Minotaur	95.7 a	81.9 g	88.8 b-e
4.	AGFBA061025	87.7 d-g	91.2 a-d	89.5 b-e
5.	AGFBA071025	82.8 fg	88.3 def	85.6 e
6.	AGFBA071225	88.7 b-f	92.3 a-d	90.5 bc
7.	AGT-Bunyip IA (AGTB0530)	94.5 ab	95.8 a	95.1 a
8.	RGT Atlantis	83.1 fg	88.8 b-f	86.0 de
9.	RGT Asteroid	88.5 c-f	91.6 a-d	90.1 bcd
10.	RP19034	88.3 def	89.8 a-e	89.1 b-e
11.	RP21011	84.2 efg	90.4 a-d	87.3 cde
Mean		87.9 -	90.2 -	89.1
LSD Cultivar p = 0.05		4.3	P value	<0.001
LSD Management p = 0.05		4.3	P value	0.208
LSD Cultivar x Man. p = 0.05		6.0	P value	0.002

Table 5. Influence of fungicide application on screenings (%) of barley cultivars plus and minus fungicide.

		Screenings %		
Variety		Untreated	Plus fungicide	Mean
1.	RGT Planet	3.3 -	3.0 -	3.1 abc
2.	Neo CL	2.7 -	1.9 -	2.3 cd
3.	Minotaur	1.4 -	1.4 -	1.4 de
4.	AGFBA061025	2.8 -	2.2 -	2.5 bc
5.	AGFBA071025	5.0 -	2.9 -	3.9 a
6.	AGFBA071225	2.7 -	2.2 -	2.4 bc
7.	AGT-Bunyip IA (AGTB0530)	1.3 -	1.4 -	1.4 e
8.	RGT Atlantis	3.9 -	2.6 -	3.2 ab
9.	RGT Asteroid	2.7 -	2.1 -	2.4 bc
10.	RP19034	2.8 -	2.8 -	2.8 bc
11.	RP21011	3.6 -	2.3 -	2.9 bc
Mean		2.9 -	2.2 -	2.6
LSD Cultivar p = 0.05		0.9	P value	<0.001
LSD Management p = 0.05		0.9	P value	0.090
LSD Cultivar x Man. p = 0.05		1.3	P value	0.353

Disease assessment data

Table 6. Influence of fungicide application on the net form net blotch (NFNB) plot infection % of barley cultivars plus and minus fungicide.

NFNB Plot Infection %				
Variety	Untreated	Plus fungicide	Mean	
1. RGT Planet	18.3 b	9.0 def	13.6	b
2. Neo CL	4.3 h-k	2.8 j-m	3.5	de
3. Minotaur	2.8 j-m	1.3 lmn	2.0	ef
4. AGFBA061025	6.8 fgh	3.0 jkl	4.9	d
5. AGFBA071025	10.5 de	5.8 ghi	8.1	c
6. AGFBA071225	10.8 d	4.0 ijk	7.4	c
7. AGT-Bunyip IA (AGTB0530)	8.0 efg	1.3 lmn	4.6	d
8. RGT Atlantis	28.8 a	14.3 c	21.5	a
9. RGT Asteroid	5.0 hij	3.8 i-l	4.4	d
10. RP19034	0.3 mn	0.1 n	0.2	f
11. RP21011	5.8 ghi	1.8 k-n	3.8	de
Mean	9.2 a	4.3 b	6.7	
LSD Cultivar p = 0.05	1.8	P value	<0.001	
LSD Management p = 0.05	2.7	P value	0.012	
LSD Cultivar x Man. p = 0.05	2.6	P value	<0.001	

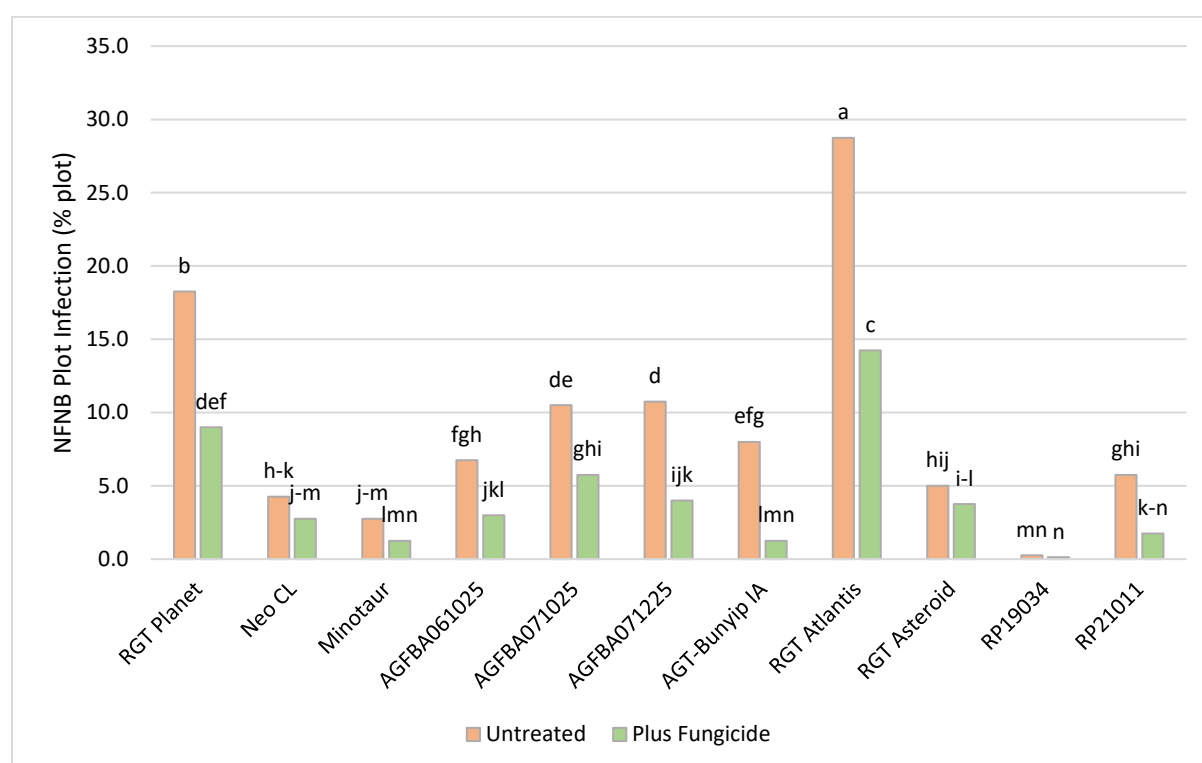


Figure 2. Influence of cultivar and fungicide application (2 spray programme) on net form net blotch (NFNB) plot infection (P-Value < 0.001, LSD = 2.6), assessed on 14 October 2025.

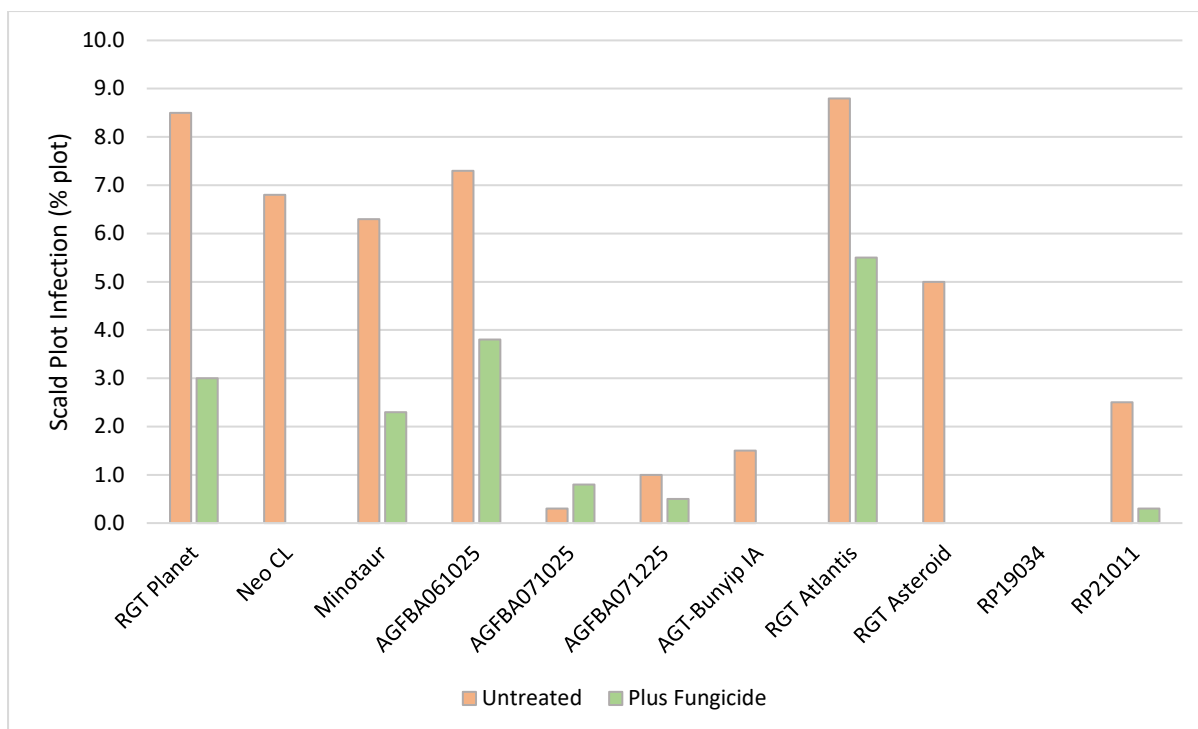


Figure 3. Influence of variety and fungicide application (2 spray programme) on **scald** plot infection (P-Value= 0.239, LSD = 4.1), assessed on 14 October 2025.

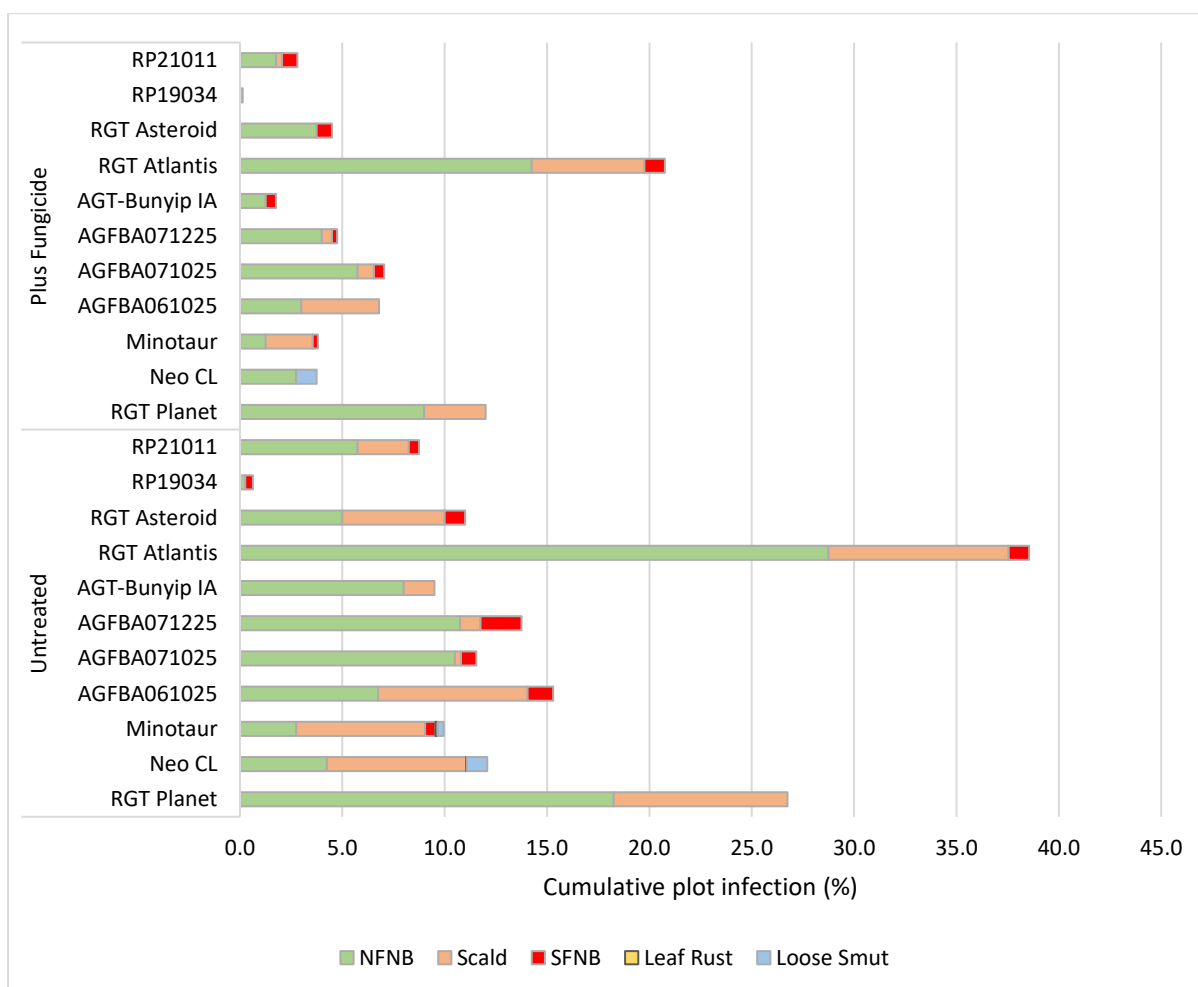


Figure 4. Cumulative plot % infection (assessed 14 October 2025).

Trial Inputs

Table 7. Trial input and management details.

Sowing date:		14 May 2025	
Harvest date:		15 December 2025	
Seed rate:		200 seeds/m ²	
Seed treatment:	RGT Planet- Imidacloprid (1.2L/t), Rancona Dimension (0.8L/t) Neo CL- Evergol Energy (1.3L/t), Cruiser 350FS (1.0L/t) All other cultivars- Vibrance (3.6L/t), Gaucho (2.4L/t)		
Basal fertiliser:	14 May	100 kg MAP/ha	
Pre-em herbicide:	13 May	Mateno Complete 0.75 L/ha	
Post-em herbicide:	30 Jul	Paradigm 25 g/ha	
		LV MCPA 570 0.5 L/ha	
		CanDo adjuvant 0.5 L/ha	
Trace elements:	30 Jul	Rapisol 321 1Kg/ha	
Nitrogen:	30 Jul	Urea 130 kg/ha (60 kg N/ha)	
	26 Sep	Urea 87 kg/ha (40 kg N/ha)	
Fungicide:		Untreated	Plus fungicide
	GS31	----	Prosaro 0.3 L/ha
	GS39	----	Aviator Xpro 0.5 L/ha

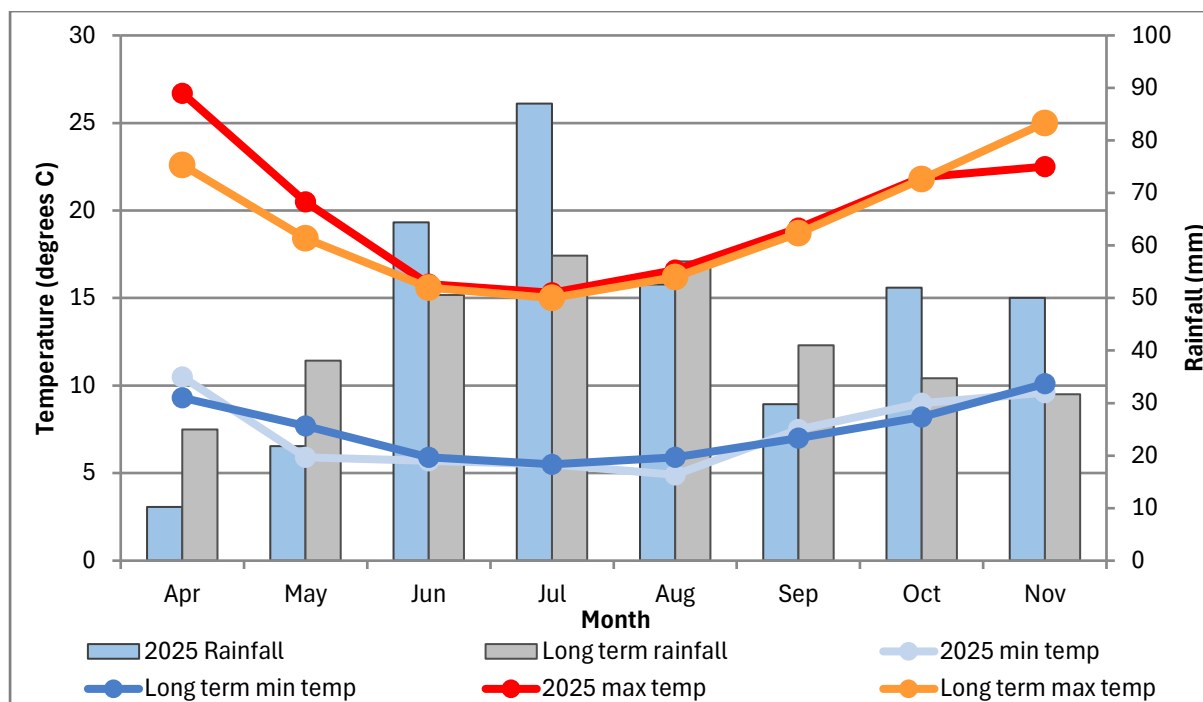


Figure 5. 2025 growing season rainfall and long-term rainfall recorded at Wolseley (Honiton) (2002-2025). 2025 min and max temperatures, and long-term temperatures recorded at Keith (1906-2025). Growing season rainfall April to November = 368 mm.

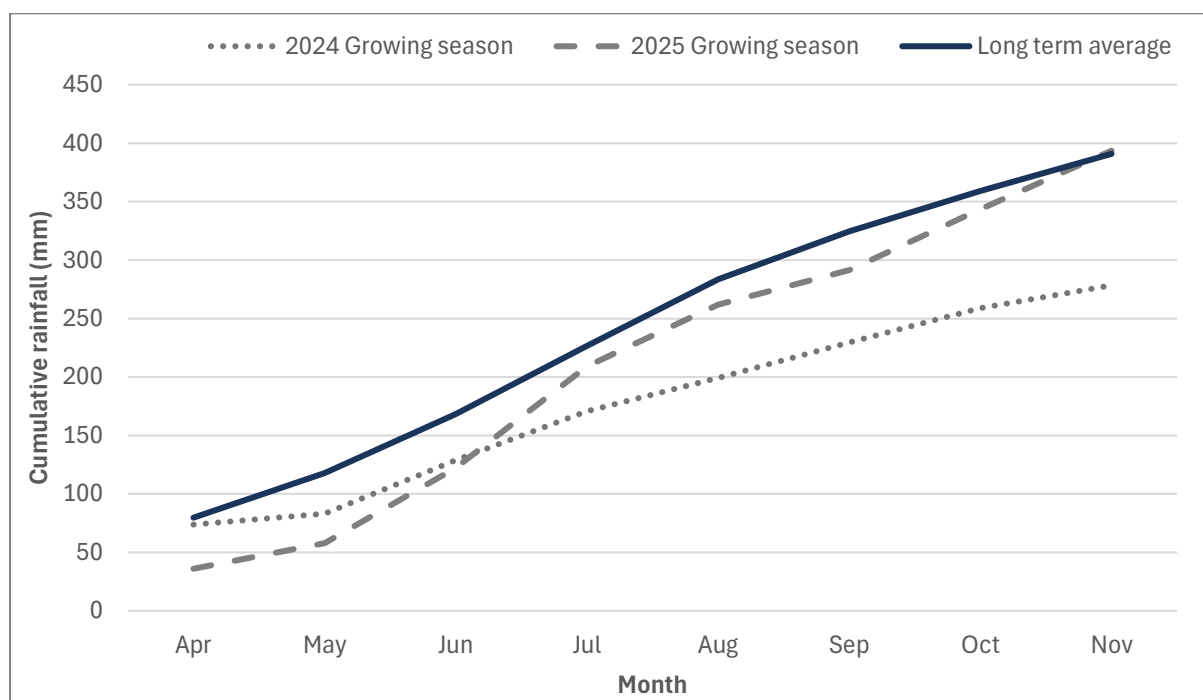


Figure 6. Cumulative growing season rainfall (April-November) for 2024, 2025, and the long-term average at Wolseley (Honiton) (2002-2025).

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