INDUSTRY INNOVATIONS 2025
HARVEST RESULTS – May Sown Wheat
2025 SA Bordertown Crop Technology Centre (MRZ)

Sown: 14 May
Harvested: 16 December
Soil type: Dark grey medium clay (Wolseley soil), stubble incorporated

Previous Crop(s): 2024 canola, 2023 chickpeas, 2022 wheat
FAR code: FAR MSA II W25-63
GSR (Apr-Nov): 368 mm

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.

Key Points:

- *There was a significant interaction between variety and fungicide application on grain yield with variety response to fungicide varying from 0.44 – 1.92t/ha (6 – 30%).*
- *With fungicide the RAGT coded spring wheat 19Q3H0499 was significantly higher yielding (8.57t/ha) than all other wheats except the other spring wheats Boa (LPB19-8035), Murray (IGW6895) and AGT-Rio (V15019-88).*
- *At 5 - 6t/ha yields in 2024 LRPB Matador and AGT-Rio were among the highest yielding and now at 8-9t/ha they are again amongst the highest yielding cultivars.*
- *Without fungicide protection LRPB Matador, AGT-Rio and 19Q3H0499 were the highest yielding varieties.*
- *Protein (%) was poor for treated and untreated plots, with a mean of 10.2% for both; only Genie, Mowhawk, and 19Q3H0393 were able to achieve minimum APW1 standards (>10.5%).*
- *Test weights and screenings were good averaging 81.2kg/hL and 1.8% respectively, achieving better results with fungicide treatment.*
- *Stripe rust (Yr) was recorded at low levels (<10% infection) in untreated plots with the highest levels recorded in Scepter (9.8%) and Murray (8.5%), and the lowest levels recorded in AGT-Rio (0.0%) and Mowhawk (0.1%).*
- *Septoria tritici blotch (STB) had slightly higher infection rates than Yr in the untreated plots, with the highest level of infection recorded in Scepter (11.3%), IGW6955 (10.3%) and Murray (8.5%). The lowest infection rates were recorded in RGT Ponsford (0.4%) and Mowhawk (0.5%).*
- *Yr and STB plot infections were < 0.05% across all cultivars with fungicide applied.*

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

Table 1. Influence of fungicide application on the grain yield (t/ha) of winter and spring wheat (varieties grown plus and minus fungicide) – May 14 sown.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	Yield t/ha		**Yield t/ha**		**Yield t/ha**	
Scepter (s)	6.69	kl	7.69	d-g	**7.19**	**def**
LRPB Matador (s)	7.57	fgh	8.06	bcd	**7.82**	**ab**
Genie (s)	6.66	kl	7.56	fgh	**7.11**	**ef**
Rockstar (s)	6.43	l	7.97	b-e	**7.20**	**def**
Mowhawk (w)	7.19	hij	7.63	efg	**7.41**	**cd**
Boa (LPB19-8035) (s)	7.34	ghi	8.33	ab	**7.83**	**ab**
Packer (S)	6.60	kl	7.59	efg	**7.09**	**f**
LPB20-8165 (s)	6.96	ijk	8.17	bc	**7.56**	**bc**
AGT-Rio (V15019-88) (s)	7.72	d-g	8.23	abc	**7.97**	**a**
RGT Ponsford (s)	6.94	jk	7.84	c-f	**7.39**	**cd**
19Q3H0499 (s)	7.52	fgh	8.57	a	**8.04**	**a**
19Q3H0393 (s)	6.69	kl	8.04	bcd	**7.37**	**c-f**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	6.88	jk	7.84	c-f	**7.36**	**c-f**
Murray (IGW6895) (s)	6.41	l	8.33	ab	**7.37**	**cde**
IGW6955 (s)	6.59	kl	8.08	bcd	**7.33**	**c-f**
Mean	**6.95**	**b**	**7.99**	**a**	**7.47**	
LSD Variety p = 0.05	0.28		**P val**		<0.001	
LSD Management p = 0.05	0.18		**P val**		<0.001	
LSD Variety x Man. p = 0.05	0.39		**P val**		<0.001	

(w) – winter wheat, (s) – spring wheat

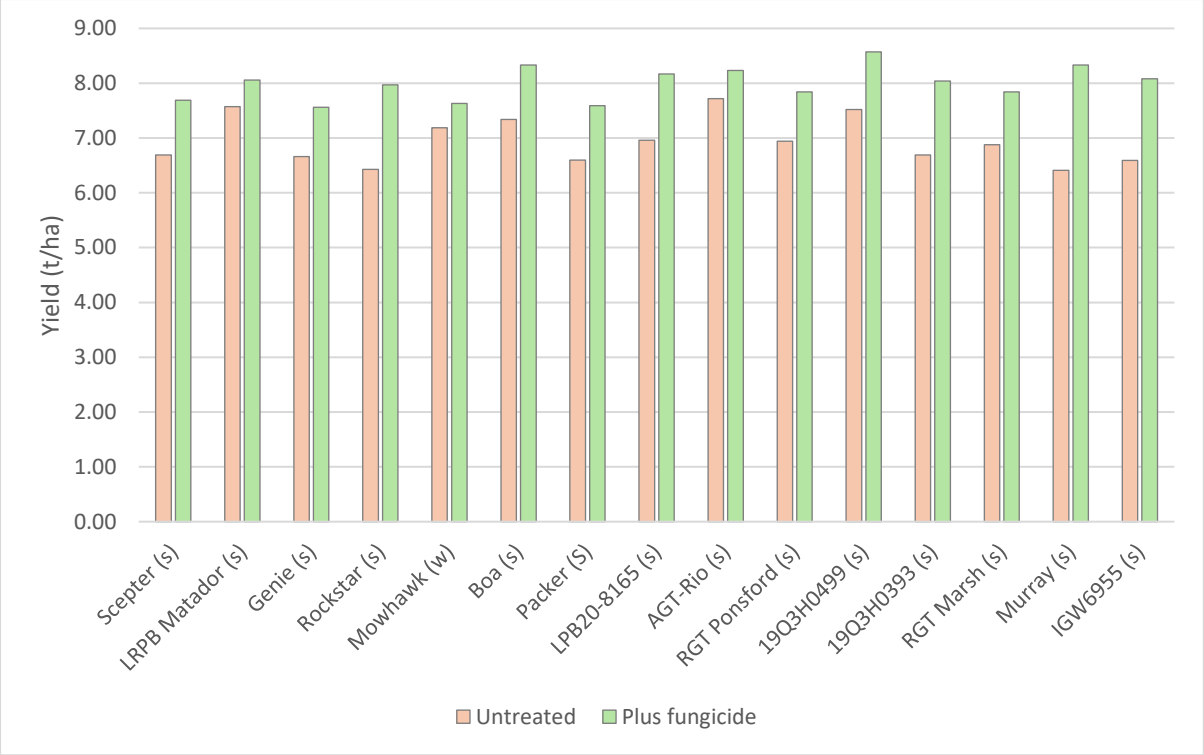

Figure 1. Influence of variety and fungicide application on grain yield (t/ha). Variety ($LSD_{0.05}$ = 0.28, P-value = <0.001) & Fungicide management ($LSD_{0.05}$ = 0.18, P-value = 0.044) – May 14 sown.

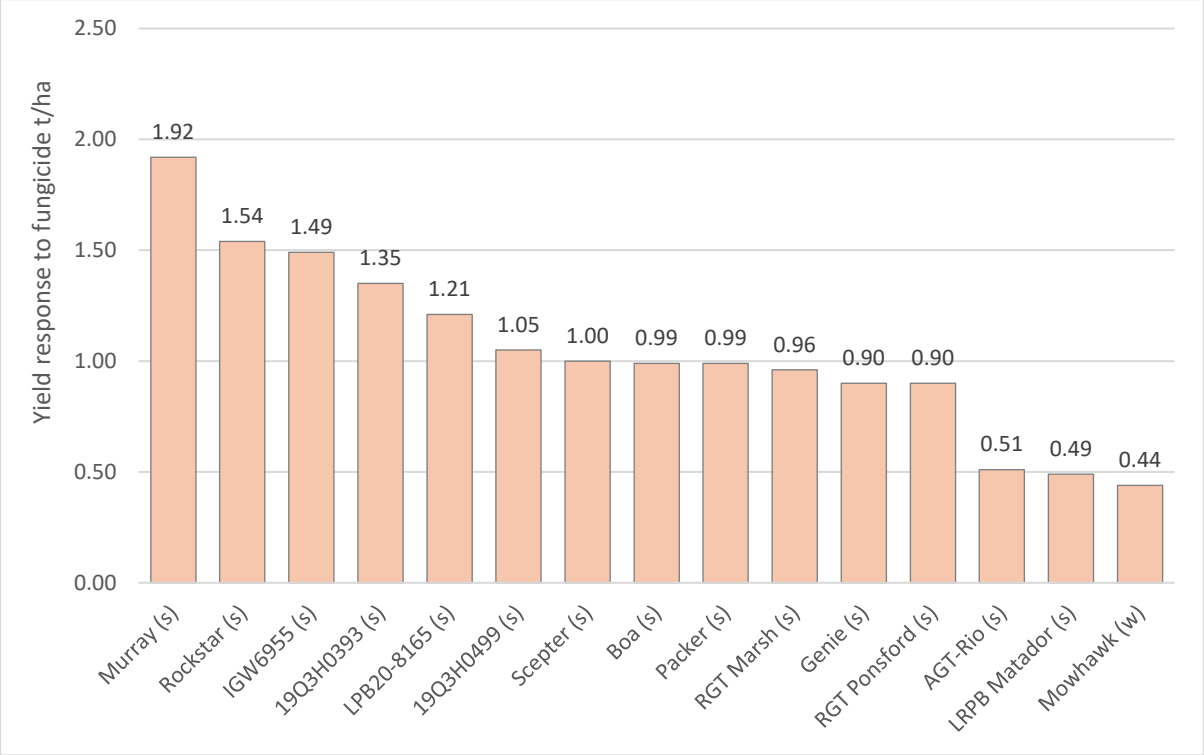

Figure 2. Fungicide yield response (t/ha) in winter and spring wheat – May 14 sown.

Table 2. Influence of variety and fungicide application on the grain protein (%) – December 16 harvest.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	Protein %		**Protein %**		**Protein %**	
Scepter (s)	10.4	d-i	10.1	i-m	**10.3**	**de**
LRPB Matador (s)	10.2	g-l	10.2	g-l	**10.2**	**def**
Genie (s)	10.6	b-e	10.6	a-d	**10.6**	**ab**
Rockstar (s)	10.3	e-j	10.4	c-h	**10.4**	**cd**
Mowhawk (w)	10.5	b-e	10.7	ab	**10.6**	**ab**
Boa (LPB19-8035) (s)	10.5	b-f	10.4	b-g	**10.5**	**bc**
Packer (S)	10.1	k-o	10.0	l-p	**10.0**	**g**
LPB20-8165 (s)	10.1	j-m	10.1	j-m	**10.1**	**efg**
AGT-Rio (V15019-88) (s)	10.0	l-p	10.1	j-n	**10.0**	**fg**
RGT Ponsford (s)	10.2	f-k	9.8	opq	**10.0**	**fg**
19Q3H0499 (s)	9.8	pq	9.6	q	**9.7**	**h**
19Q3H0393 (s)	10.8	a	10.7	abc	**10.7**	**a**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	10.0	k-p	10.2	g-l	**10.1**	**efg**
Murray (IGW6895) (s)	10.2	g-l	9.8	n-q	**10.0**	**g**
IGW6955 (s)	10.2	h-m	9.9	m-p	**10.0**	**fg**
Mean	**10.2**	-	**10.2**	-	**10.2**	
LSD Variety p = 0.05	0.2		**P val**		<0.001	
LSD Management p = 0.05	ns		**P val**		0.130	
LSD Variety x Man. p = 0.05	0.3		**P val**		0.009	

Table 3. Influence of variety and fungicide application on the test weights (kg/hL) – December 16 harvest.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	Test weight kg/hL		**Test weight kg/hL**		**Test weight kg/hL**	
Scepter (s)	76.7	i	82.6	a-d	**79.6**	**d**
LRPB Matador (s)	82.2	a-e	83.3	ab	**82.8**	**a**
Genie (s)	79.7	fg	83.7	a	**81.7**	**ab**
Rockstar (s)	76.4	i	82.6	a-d	**79.5**	**d**
Mowhawk (w)	81.9	b-e	82.8	abc	**82.3**	**ab**
Boa (LPB19-8035) (s)	81.3	c-f	83.3	ab	**82.3**	**ab**
Packer (S)	80.8	def	83.1	abc	**81.9**	**ab**
LPB20-8165 (s)	79.7	fg	83.6	ab	**81.6**	**ab**
AGT-Rio (V15019-88) (s)	82.3	a-e	83.4	ab	**82.9**	**a**
RGT Ponsford (s)	78.9	gh	83.2	ab	**81.1**	**bc**
19Q3H0499 (s)	80.6	efg	83.3	ab	**81.9**	**ab**
19Q3H0393 (s)	77.3	hi	82.6	a-d	**79.9**	**cd**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	79.8	fg	83.0	abc	**81.4**	**b**
Murray (IGW6895) (s)	76.5	i	83.4	ab	**79.9**	**cd**
IGW6955 (s)	77.3	hi	82.4	a-e	**79.8**	**cd**
Mean	**79.4**	**b**	**83.1**	**a**	**81.2**	
LSD Variety p = 0.05	1.3		**P val**		<0.001	
LSD Management p = 0.05	0.4		**P val**		<0.001	
LSD Variety x Man. p = 0.05	1.8		**P val**		<0.001	

Table 4. Influence of variety and fungicide on the screenings (% < 2.0 mm)– December 16 harvest.

Variety	Management Level: Untreated		Plus fungicide		Mean	
	Screenings %		Screenings %		Screenings %	
Scepter (s)	2.2	cd	1.7	c-i	**2.0**	**bc**
LRPB Matador (s)	2.0	c-f	1.8	c-h	**1.9**	**bc**
Genie (s)	5.4	a	2.4	bc	**3.9**	**a**
Rockstar (s)	1.9	c-f	1.3	f-i	**1.6**	**cd**
Mowhawk (w)	1.4	f-i	1.3	f-i	**1.3**	**de**
Boa (LPB19-8035) (s)	1.4	f-i	1.4	e-i	**1.4**	**de**
Packer (S)	2.1	cde	1.6	d-i	**1.9**	**bcd**
LPB20-8165 (s)	1.9	c-g	1.3	f-i	**1.6**	**cde**
AGT-Rio (V15019-88) (s)	1.2	ghi	1.0	i	**1.1**	**e**
RGT Ponsford (s)	1.9	c-g	1.6	d-i	**1.7**	**cd**
19Q3H0499 (s)	1.8	c-h	1.5	d-i	**1.7**	**cd**
19Q3H0393 (s)	2.1	cde	1.1	hi	**1.6**	**cd**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	1.8	c-h	1.6	d-i	**1.7**	**cd**
Murray (IGW6895) (s)	3.1	b	1.5	d-i	**2.3**	**b**
IGW6955 (s)	2.2	cd	1.4	e-i	**1.8**	**cd**
Mean	**2.2**	**a**	**1.5**	**b**	**1.8**	
LSD Variety p = 0.05	0.5		**P val**		<0.001	
LSD Management p = 0.05	0.2		**P val**		0.001	
LSD Variety x Man. p = 0.05	0.8		**P val**		<0.001	

Table 5. Influence of fungicide application and variety on plot disease infection levels (%) of Stripe rust (Yr) – assessed October 15.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	Yr %		**Yr %**		**Yr %**	
Scepter (s)	9.8	a	0.0	i	**4.9**	**a**
LRPB Matador (s)	1.1	ghi	0.0	i	**0.6**	**ef**
Genie (s)	3.3	efg	0.0	i	**1.6**	**def**
Rockstar (s)	5.8	cd	0.0	i	**2.9**	**bcd**
Mowhawk (w)	0.1	hi	0.0	i	**0.0**	**f**
Boa (LPB19-8035) (s)	0.7	hi	0.0	i	**0.4**	**ef**
Packer (S)	5.5	cde	0.0	i	**2.8**	**bcd**
LPB20-8165 (s)	4.0	def	0.0	i	**2.0**	**cde**
AGT-Rio (V15019-88) (s)	0.0	i	0.0	i	**0.0**	**f**
RGT Ponsford (s)	2.5	fgh	0.0	i	**1.3**	**def**
19Q3H0499 (s)	3.8	def	0.0	i	**1.9**	**cde**
19Q3H0393 (s)	7.3	bc	0.0	i	**3.6**	**abc**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	3.6	def	0.0	hi	**1.8**	**de**
Murray (IGW6895) (s)	8.5	ab	0.0	i	**4.3**	**ab**
IGW6955 (s)	5.0	cde	0.0	i	**2.5**	**bcd**
Mean	**4.1**	**a**	**0.0**	**b**	**2.0**	
LSD Variety p = 0.05	1.8		**P val**		<0.001	
LSD Management p = 0.05	1.8		**P val**		0.006	
LSD Variety x Man. p = 0.05	2.5		**P val**		<0.001	

Table 6. Influence of fungicide application and variety on plot disease infection levels (%) of Septoria tritici blotch (STB) – assessed October 15.

	Management Level					
Variety	**Untreated**		**Plus fungicide**		**Mean**	
	STB %		**STB %**		**STB %**	
Scepter (s)	11.3	a	0.0	i	**5.6**	**a**
LRPB Matador (s)	4.5	def	0.0	i	**2.3**	**c-f**
Genie (s)	3.0	fgh	0.0	i	**1.5**	**d-h**
Rockstar (s)	2.0	ghi	0.0	i	**1.0**	**e-h**
Mowhawk (w)	0.5	i	0.0	i	**0.3**	**gh**
Boa (LPB19-8035) (s)	3.8	efg	0.0	i	**1.9**	**c-g**
Packer (S)	1.8	ghi	0.0	i	**0.9**	**fgh**
LPB20-8165 (s)	5.8	de	0.0	i	**2.9**	**bcd**
AGT-Rio (V15019-88) (s)	1.0	hi	0.0	i	**0.5**	**gh**
RGT Ponsford (s)	0.4	i	0.0	i	**0.2**	**h**
19Q3H0499 (s)	4.8	def	0.0	i	**2.4**	**c-f**
19Q3H0393 (s)	6.8	cd	0.0	i	**3.4**	**bc**
RGT Marsh (H16Q3x0336.SCI-097D) (s)	5.3	def	0.0	i	**2.6**	**b-e**
Murray (IGW6895) (s)	8.5	bc	0.0	i	**4.3**	**ab**
IGW6955 (s)	10.3	ab	0.0	i	**5.1**	**a**
Mean	**4.6**	**a**	**0.0**	**b**	**2.3**	
LSD Variety p = 0.05	1.7		**P val**		<0.001	
LSD Management p = 0.05	1.3		**P val**		0.002	
LSD Variety x Man. p = 0.05	2.4		**P val**		<0.001	

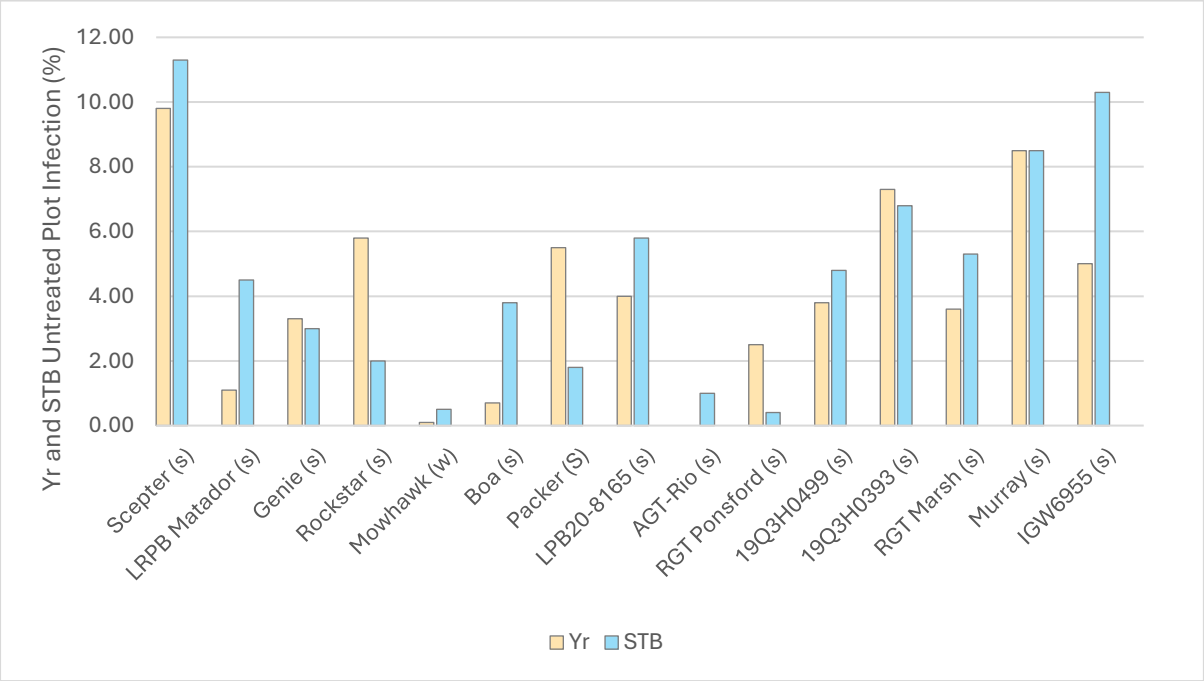

Figure 3. Plot infection (%) of Stripe rust (Yr) ($LSD_{0.05}$ = 2.5, P-value = <0.001) and Septoria tritici blotch (STB) ($LSD_{0.05}$ = 2.4, P-value = <0.001) in untreated plots. Plus fungicide plots not presented, all <0.05% infection.

Table 7. Trial input and management details

Sowing date:		**14 May**	
Harvest date:		**16 December**	
Seed rate:		180 seeds/m^2	
Basal fertiliser:	14 May	100 kg/ha MAP	
Pre-em herbicide:	13 May	Mateno Complete 0.75 L/ha	
Broadleaf herbicide:	30 Jul	LVE MCPA 570 0.50 L/ha	
	30 Jul	Paradigm 25 g/ha	
	30 Jul	CanDo adjuvant 0.5% v/v	
Nutrition:	30 July	130 kg urea/ha (60 kg N/ha)	
	30 July	Rapisol 3-2-1 1 kg/ha	
	26 Sept	87 kg urea/ha (40 kg N/ha)	
Fungicide:		**Untreated**	**Plus Fungicide**
	GS31	----	Prosaro 0.30 L/ha
	GS39	----	Aviator Xpro 0.50 L/ha
	GS59	----	Soprano 500 1.25 L/ha

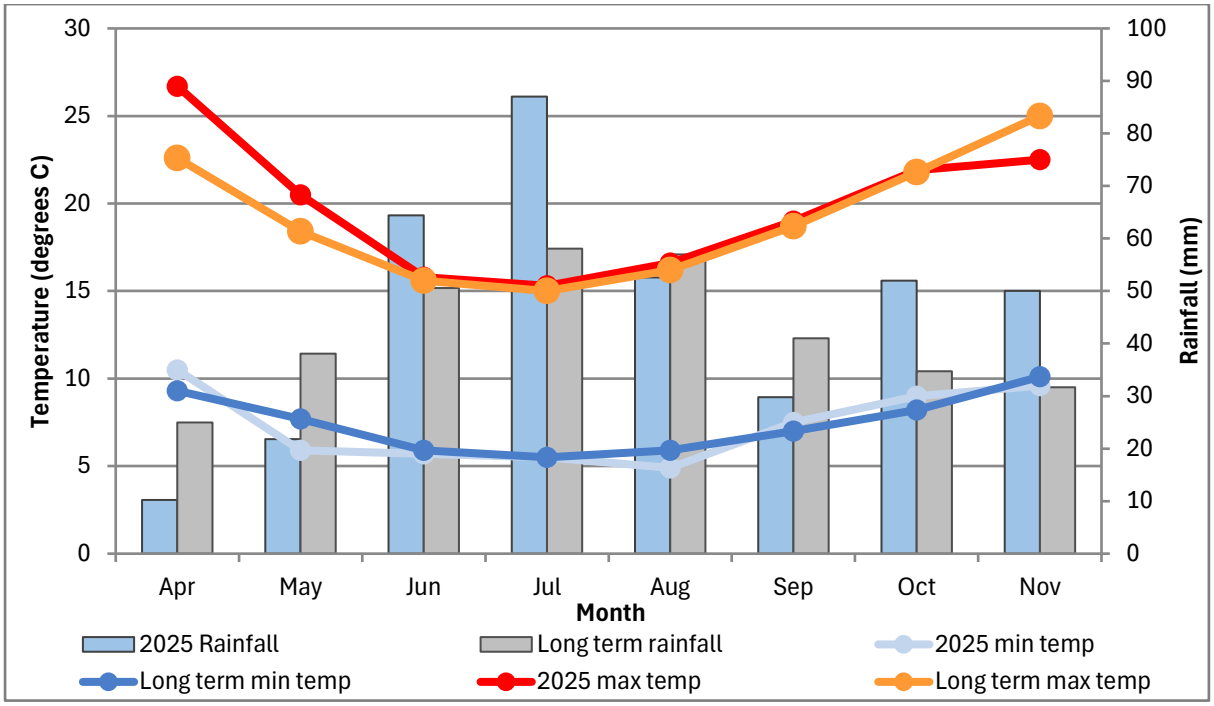

Figure 4. 2025 growing season rainfall and long-term rainfall recorded at Wolseley (Honiton) (2002-2025). 2025 min and max temperatures, and long-term temperatures recorded at Keith (1906-2025). *Growing season rainfall April to November = 368 mm.*

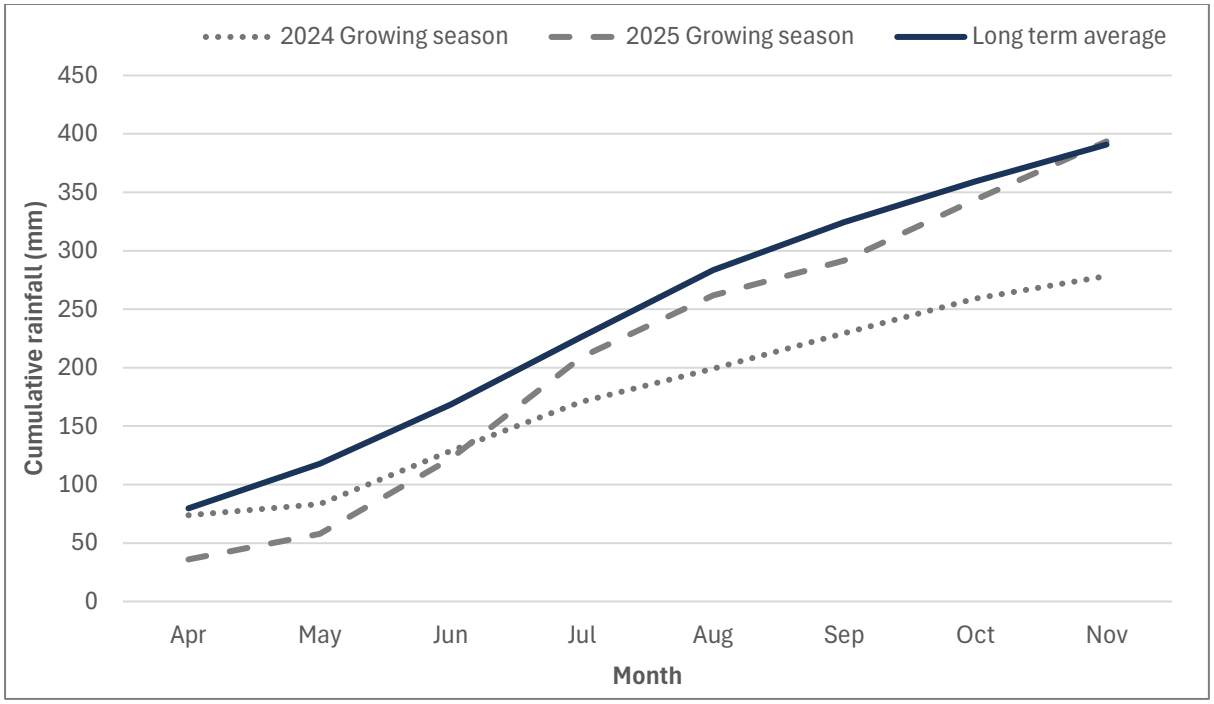

Figure 5. Cumulative growing season rainfall (April-November) for 2024, 2025, and the long-term average at Wolseley (Honiton) (2002-2025).

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