INDUSTRY INNOVATIONS 2024: PROVISIONAL HARVEST RESULTS – May Sown Canola

2024 SA Crop Technology Centre (HRZ Millicent)

Sown: 6 May 2024
Harvested: 18 December 2024
Rotation position: 2023 broad beans, 2022 clover
Soil type: Organosol over grey clay
FAR code: FAR SAC II C24-43
Surrounding paddock variety: 45Y95 CL, nearest 2023 stubbles in adjacent paddock

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:

- *Oilseed yields ranged from 3.15 – 4.51 t/ha depending on variety and fungicide application with significant differences recorded in variety performance (p=<0.001).*
- *While there was no significant response to fungicide (p=0.067), there was an overall trend of approximately 200 kg/ha yield increase when fungicides were applied, there was no significant interaction between variety and fungicide application (p=0.41).*
- *45Y95 CL which has traditionally performed strongly at the Millicent site was lower yielding in 2024 and was associated a higher incidence of blackleg canker, although severity of the disease was relatively low overall.*
- *Nuseed Eagle TF was the highest yielding of the FAR funded control varieties while the coded line RGT65-074CL (4.33 t/ha) significantly outperformed all other varieties.*
- *AN23LR014 along with Nuseed Eagle TF were the second highest yielding cultivars in the trial.*
- *The season was not associated with high levels of disease infection and fungicide application did not have a bearing on test weight or oil content.*
- *Hyola Regiment XC (46.7%) gave significantly higher oil contents than all other varieties but recorded the second lowest yield.*
- *Lodging levels were low in this trial, with crops showing signs of leaning rather than lodging, it is unlikely that the small differences had any bearing on the yield results.*

Yield (t/ha) & quality data (Test weight, % oil content)

The following three tables (Table 1-3) of data examine the influence of eight spring canola varieties with and without a two-spray foliar fungicide application on the seed yield and seed quality at the FAR Australia Crop Technology Centre at Millicent in the HRZ region. All seed (including untreated plots) were treated with a SDHI fungicidal seed treatment and seed treatment insecticide. However, blackleg rating (2024) in Table 1 is based on bare seed (source: Vic Crop sowing guide 2025).

Table 1. Influence of fungicide application on the seed yield (t/ha) of canola (varieties grown plus and minus fungicide) – May 6 sown.

		Management Level					
Variety	**Blackleg**	**Untreated**		**Plus fungicide**		**Mean**	
	Rating	**Yield t/ha**		**Yield t/ha**		**Yield t/ha**	
Pioneer PY525G OptiGly	MR	3.57	-	3.92	-	**3.74**	**c**
Nuseed Eagle TF	R	3.95	-	4.01	-	**3.98**	**b**
45Y95 CL	RMR	3.44	-	3.93	-	**3.69**	**c**
Hyola Blazer TT	RMR	3.26	-	3.46	-	**3.36**	**d**
Hyola Continuum CL	R	3.15	-	3.34	-	**3.24**	**d**
Hyola Regiment XC	R	3.27	-	3.43	-	**3.35**	**d**
AN23LR014	--	4.01	-	4.08	-	**4.05**	**b**
RGT65-074CL	--	4.16	-	4.51	-	**4.33**	**a**
Mean		**3.60**	**-**	**3.83**	**-**	**3.72**	
LSD Variety p = 0.05		0.21		**P val**		<0.001	
LSD Management p = 0.05		ns		**P val**		0.067	
LSD Variety x Man. p = 0.05		ns		**P val**		0.410	

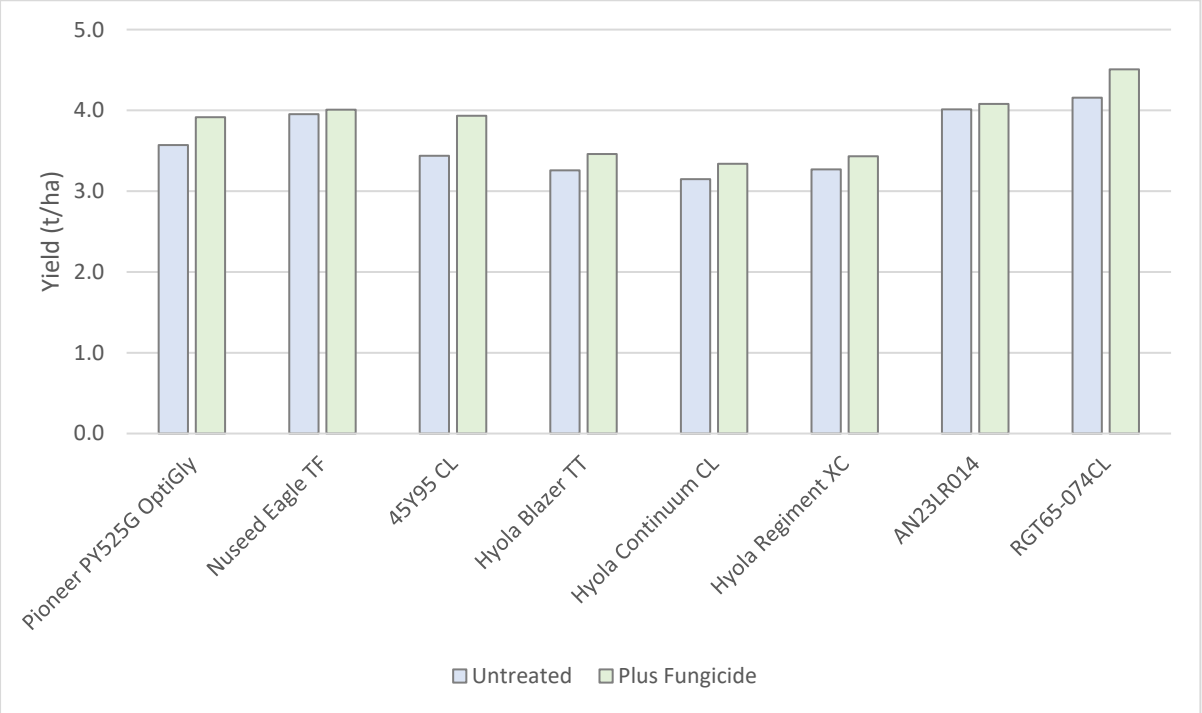

Figure 1. Influence of variety and fungicide application on grain yield (t/ha) of canola (varieties grown plus and minus fungicide) (P values and LSD available in Table 1.) – May 6 sown.

Table 2. Influence of variety and fungicide application on the test weights (kg/hL) and oil content (%) – December 18 harvest.

	Management Level											
Variety	**Untreated**		**Fungicide protection**		**Mean**		**Untreated**		**Fungicide protection**		**Mean**	
	Test Weights (kg/hL)		**Test Weights (kg/hL)**		**Test Weights (kg/hL)**		**Oil (%)**		**Oil (%)**		**Oil (%)**	
Pioneer PY525G OptiGly	63.9	-	63.7	-	**63.8**	**bc**	44.7	-	44.3	-	**44.5**	**cd**
Nuseed Eagle TF	62.8	-	63.5	-	**63.2**	**de**	45.6	-	45.4	-	**45.5**	**b**
45Y95 CL	62.7	-	63.1	-	**62.9**	**e**	43.9	-	44.6	-	**44.2**	**d**
Hyola Blazer TT	64.1	-	64.7	-	**64.4**	**a**	43.9	-	43.5	-	**43.7**	**e**
Hyola Continuum CL	64.3	-	64.0	-	**64.1**	**ab**	44.8	-	44.7	-	**44.8**	**c**
Hyola Regiment XC	63.4	-	64.0	-	**63.7**	**bc**	46.8	-	46.6	-	**46.7**	**a**
AN23LR014	63.5	-	63.7	-	**63.6**	**cd**	44.7	-	44.8	-	**44.8**	**c**
RGT65-074CL	64.2	-	64.4	-	**64.3**	**a**	44.0	-	43.2	-	**43.6**	**e**
Mean	**63.6**	**-**	**63.9**	**-**	**63.7**		**44.8**	**-**	**44.6**	**-**	**44.7**	
Variety	**LSD p = 0.05**	0.5	**P val**	<0.001			**LSD p = 0.05**	0.5	**P val**	<0.001		
Management	**LSD p = 0.05**	ns	**P val**	0.090			**LSD p = 0.05**	ns	**P val**	0.430		
Var. x Man.	**LSD p = 0.05**	ns	**P val**	0.486			**LSD p = 0.05**	ns	**P val**	0.131		

Table 3. Influence of variety and fungicide application on the protein content (%) and admix impurities (%) – December 18 harvest.

	Management Level											
Variety	**Untreated**		**Fungicide protection**		**Mean**		**Untreated**		**Fungicide protection**		**Mean**	
	Protein (%)		**Protein (%)**		**Protein (%)**		**Admix (%)**		**Admix (%)**		**Admix (%)**	
Pioneer PY525G OptiGly	19.9	-	21.0	-	**20.5**	**c**	2.5	-	2.4	-	**2.4**	**de**
Nuseed Eagle TF	19.0	-	19.4	-	**19.2**	**ef**	3.3	-	2.9	-	**3.1**	**a**
45Y95 CL	20.5	-	19.8	-	**20.1**	**cd**	3.3	-	2.7	-	**3.0**	**ab**
Hyola Blazer TT	21.8	-	22.5	-	**22.2**	**a**	2.4	-	2.7	-	**2.5**	**cde**
Hyola Continuum CL	21.4	-	21.5	-	**21.4**	**b**	2.8	-	2.8	-	**2.8**	**bc**
Hyola Regiment XC	18.9	-	19.1	-	**19.0**	**f**	2.7	-	2.5	-	**2.6**	**cde**
AN23LR014	19.4	-	19.9	-	**19.7**	**de**	2.3	-	2.3	-	**2.3**	**e**
RGT65-074CL	20.8	-	21.4	-	**21.1**	**b**	2.9	-	2.5	-	**2.7**	**cd**
Mean	**20.2**	**-**	**20.6**	**-**	**20.4**		**2.7**	**-**	**2.6**	**-**	**2.7**	
Variety	**LSD p = 0.05**	0.5	**P val**	<0.001			**LSD p = 0.05**	0.3	**P val**	<0.001		
Management	**LSD p = 0.05**	ns	**P val**	0.077			**LSD p = 0.05**	ns	**P val**	0.414		
Var. x Man.	**LSD p = 0.05**	ns	**P val**	0.094			**LSD p = 0.05**	ns	**P val**	0.208		

Table 4. Influence of variety and fungicide application on the severity (stem infection %) and incidence (% of stems infected) of blackleg stem canker – December 4 assessed.

	Management Level											
Variety	**Untreated**		**Fungicide protection**		**Mean**		**Untreated**		**Fungicide protection**		**Mean**	
	Severity (%)		**Severity (%)**		**Severity (%)**		**Incidence (%)**		**Incidence (%)**		**Incidence (%)**	
Pioneer PY525G OptiGly	0.0	-	5.0	-	**2.5**	**-**	0.0	-	5.0	-	**2.5**	**b**
Nuseed Eagle TF	5.0	-	7.5	-	**6.3**	**-**	5.0	-	7.5	-	**6.3**	**ab**
45Y95 CL	11.5	-	2.6	-	**7.1**	**-**	17.5	-	5.0	-	**11.3**	**a**
Hyola Blazer TT	0.0	-	0.0	-	**0.0**	**-**	0.0	-	0.0	-	**0.0**	**b**
Hyola Continuum CL	0.0	-	0.0	-	**0.0**	**-**	0.0	-	0.0	-	**0.0**	**b**
Hyola Regiment XC	3.9	-	0.0	-	**1.9**	**-**	7.5	-	0.0	-	**3.8**	**b**
AN23LR014	0.0	-	0.0	-	**0.0**	**-**	0.0	-	0.0	-	**0.0**	**b**
RGT65-074CL	0.3	-	2.5	-	**1.4**	**-**	2.5	-	2.5	-	**2.5**	**b**
Mean	**2.6**	**-**	**2.2**	**-**	**2.4**		**4.1**	**-**	**2.5**	**-**	**3.3**	
Variety	**LSD p = 0.05**	ns	**P val**	0.091			**LSD p = 0.05**	6.8	**P val**	0.023		
Management	**LSD p = 0.05**	ns	**P val**	0.725			**LSD p = 0.05**	ns	**P val**	0.141		
Var. x Man.	**LSD p = 0.05**	ns	**P val**	0.369			**LSD p = 0.05**	ns	**P val**	0.229		

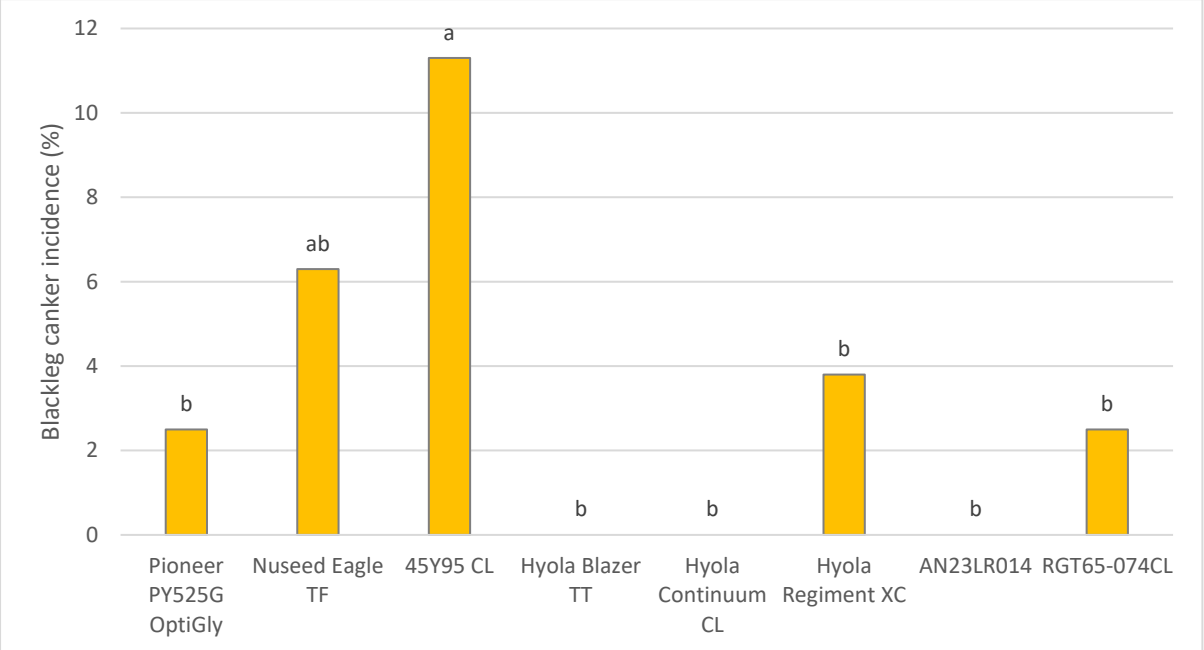

Figure 2. Influence of variety on the incidence of blackleg canker stem infection (% of stems infected) (P values and LSD can be found in Table 4) – December 4 assessed.

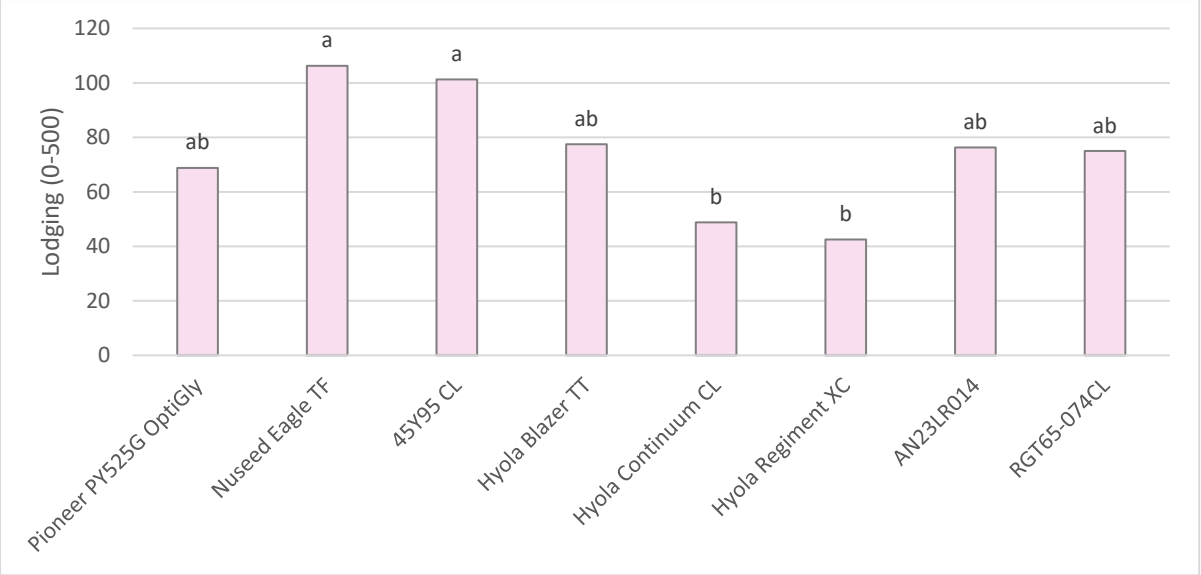

Figure 3. Influence of variety on crop lodging (0-500). (LSD variety $_{p=0.05}$ = 42.1, P value = 0.047, all fungicide responses and interactions were insignificant).

Table 5. Trial input and management details for the trial (kg, g, mL/ha, L/ha).

Sowing date:		**6 May**	
Harvest date:		**18 December**	
Seed rate:		60 seeds/m^2	
Seed treatment		All plots – SDHI seed treatment & insecticide	
Basal fertiliser:	6 May	145 Kg/ha MAP	
Pre-em herbicide:	6 May	TriflurX 1.50 L/ha	
		Overwatch 1.25 L/ha	
		Gramoxone 360 2.00 L/ha	
Post-em herbicide overall:	4 July	Platinum Xtra 330 mL/ha	
		Lontrel advanced 150 mL/ha	
		Ammonium Sulphate 0.8 kg/ha	
		Expedient 0.1% v/v	
Post-em herbicide by group:	RR/OptiGly/XC/TF	Crucial 1 L/ha (applied 6 leaf)	
	CL	Intervix 0.75 L/ha	
	CL	Expedient 0.5% v/v	
	TT	Atrazine 1.04 kg/ha	
	TT	Expedient 0.5% v/v	
Insecticide:	8 May	AlphaScud 300 100 mL/ha	
Molluscicide:	7 May	Metarex 5 kg/ha	
Fertiliser:	29 June	SOA/Urea (50:50) 200 kg/ha (66 kg N/ha)	
	29 August	150 kg urea/ha (69 kg N/ha)	
Fungicide:		**Untreated**	**Fungicide Protection**
	BBCH 16	----	Prosaro 0.45 L/ha
	BBCH 62	----	Aviator 0.80 L/ha

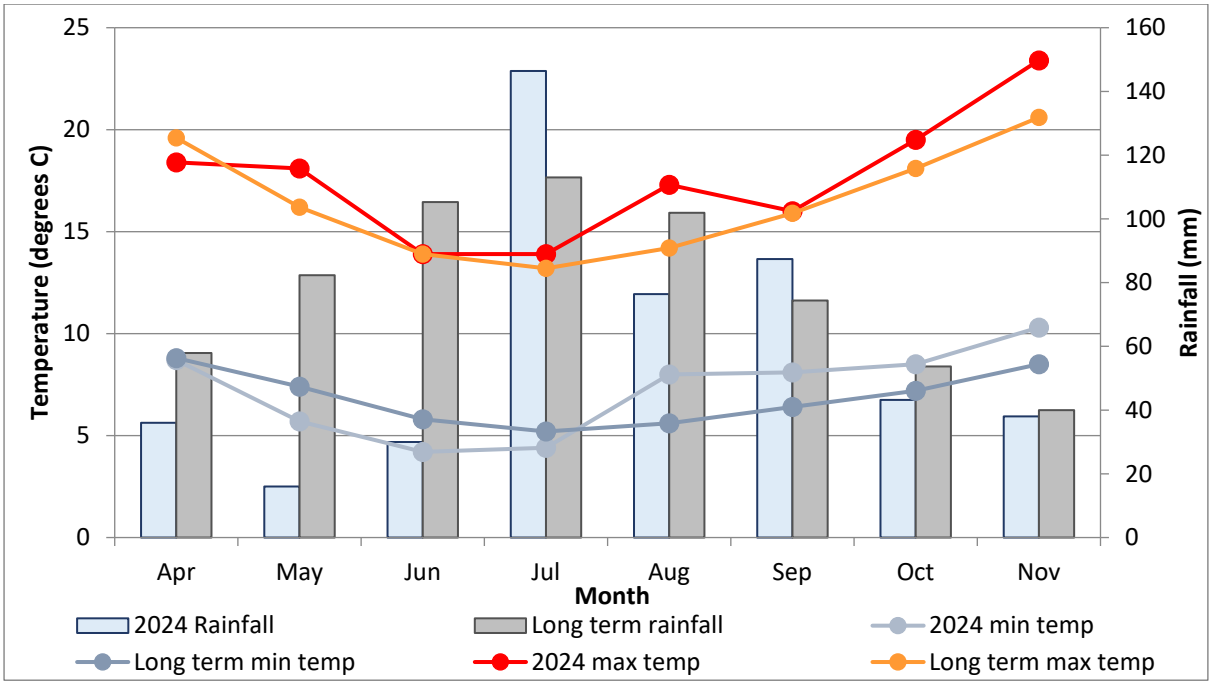

Figure 4. 2024 growing season rainfall and long-term rainfall recorded at Millicent (1887-2024). 2024 min and max temperatures, and long-term temperatures recorded at Mount Gambier (1942-2024). *Growing season rainfall April to November= 473.6 mm.*