

2021 SA Crop Technology Centre Millicent, South Australia

Sown: 7 May 2021 (spring-sown trial sown 18 August 2021)

Harvested: Spring cultivar trials: 12-13 December 2021; winter cultivar trials 24 January 2022;
spring-sown trial: 25 January 2022

Rotation position: 2020 Wheat

Soil type & management: Neutral-slightly alkaline Organosol (Peat soil)

Colwell P (ppm) 0-10 cm: 56

pH (CaCl₂) 0-10 cm: 7.7

Organic Carbon (%) 0-10 cm: 9.7%

Trial 1: SAC C21-21 Winter Screen

Objectives: To examine the suitability of elite commercial and unreleased winter canola cultivars for hyper yielding regions.

Key Messages:

- AGFCA014120, Phoenix CL and CL214103 were the highest yielding cultivars, all significantly higher yielding than Hyola 970CL, RGT Nizza CL and SFR65-056-CL.
- AGFCA014120 and CL214103 also had the highest oil concentration, both either at or close to 49%.
- Despite high N input and a fertile soil, protein levels were low with an average of 17.3%, meaning only 27.7 kg/ha nitrogen was harvested per tonne of grain harvested.

Treatments: 10 winter canola cultivars sown in small plots (half of normal plot length) with three replicates.

Table 1: Grain yield (t/ha), quality (%) and thousand seed weight (TSW, g), harvested 24 January 2022.

Grain Yield and Quality									
Variety		Yield t/ha		Protein %		Oil %		TSW g	
1.	Hyola Feast CL	3.48	ab	17.7	ab	47.7	bc	5.18	-
2.	AGFCA014420	3.78	ab	18.0	a	47.1	c	5.01	-
3.	Hyola 970CL	3.13	b	18.3	a	47.3	c	5.38	-
4.	RGT Nizza CL	3.10	b	17.8	ab	48.6	ab	5.29	-
5.	Phoenix CL	4.43	a	16.5	b	48.7	ab	4.96	-
6.	CL214103	4.65	a	17.7	ab	48.9	a	5.27	-
7.	CL214006	3.40	ab	18.0	a	46.8	c	4.93	-
8.	SFR65-056-CL	2.83	b	16.5	b	47.1	c	5.56	-
9.	AGFCA014120	4.67	a	17.2	ab	49.0	a	5.04	-
10.	AGFCA014320	4.07	ab	15.1	c	47.0	c	5.04	-
Mean		3.75		17.3		47.8		5.16	
LSD		1.29		1.4		1.2		0.56	
P Val		0.048		0.002		<0.001		0.385	
CV		23.71		5.5		1.7		7.51	

AOV

Table 2. Trial management details.

Sowing date:		7 May
Plant density target:		60 plants/m ²
Sowing Fertiliser:		150kg MAP & 125kg SOA
Nitrogen:	6 Leaf	113kg N/ha
	Bud Visible	113kg N/ha
Fungicide:	Seed treatment	Saltro Duo
	6 Leaf	Prosaro 0.45L/ha
	20% Bloom	Aviator Xpro 0.80L/ha

Trial 2: SAC C21-22 Spring Screen

Objectives: To examine the suitability of elite commercial and unreleased spring cultivars for hyper yielding regions.

Key Messages:

Clearfield trial

- 45Y93 CL and 45Y95 CL were the standouts for grain yield, yielding above 5.6t/ha.
- The European spring cultivar AGFCA014520 was very tall but lower yielding compared to the best Australian bred cultivars.
- Oil was highest in the unreleased PS-21CL211 and PS-21XC318.

Glyphosate tolerant trial (Roundup Ready and Triflex)

- NCH20Q729 was the highest yielding and tallest cultivar.
- There was no difference in oil concentration in the glyphosate tolerant trial.

Triazine tolerant trial

- There was no statistical difference in yield between the four TT cultivars.
- ATR Wahoo and HyTTec Trifecta had the highest oil concentration.

Overall conclusions

- There were larger yield differences observed within trials than between trials. It is best to pick the appropriate herbicide tolerance required for a paddock than select the best cultivar within that herbicide tolerance group.
- Protein was higher than the winter screen, with an average of 21.8% meaning 34.3kg/ha nitrogen was harvested per tonne of grain harvested.

Treatments: 16 cultivars sown in small plots (half of normal plot length) with three replicates. Trial was blocked and analysed by herbicide tolerance.