HARVEST YIELD RESULTS

Canola Nutrition Trial

2021 SA Crop Technology Centre

Hyper Yielding Crops Project (FAR2004-002SAX)

A Grains Research & Development Corporation (GRDC) investment

Sown: 7 May 2021
Harvested: 12 December 2021
Rotation position: 2020 Wheat, 2019 Faba Beans, 2018 Carrots
Soil type: Neutral-slightly alkaline Organosol (Peat soil) – high organic matter (0-10cm 16.7% OM)
Canola Variety: Pioneer 45Y28RR

Key Messages:

- Grain yields of greater than 6 t/ha were achieved with N application rates of 150-300 kg/ha. Yields responses to bagged N peaked at 150kg N/ha and similar yields were achieved between 150, 225, and 300kg/ha of applied N (urea)
- A peak grain yield of close to 6.5 t/ha was achieved where a high rate of nitrogen fertiliser was combined with the application of animal manure to replicate high fertility soils in mixed legume rotation.
- The yield of 6.5 t/ha raised the bar on our understanding of achievable yield for spring canola for this environment.
- Grain quality results are pending.

Treatments: Six Nutrition rates applied as an equal split at 6-leaf and bud visible. Manure applied pre-sowing.

Table 1. Yield of the Nutrition trial (t/ha).

Applied Nitrogen in Crop	Yield t/ha	
Nil	4.92	c
75 kg N /ha	5.64	b
150 kg N /ha	6.00	ab
225 kg N /ha	5.81	b
300 kg N /ha	6.06	ab
225 kg N /ha + 6.7t/ha Pig Manure*	6.49	a
Mean	5.82	
LSD 0.05	0.56	
P Val	<0.001	

Issued: 21 December 2021

*Pig Manure expressed % dry matter basis (2.7% Nitrogen, and 1.26% Phosphorus) = additional 169kg N/ha and 85kg P/ha to replicate high fertility soils

Table 2. Details of the management levels.

Sowing date:		7 May
Plant population:		45 plants/m²
Canola Variety		Pioneer 45Y28RR
Basal Fertiliser:		130 kg/ha MAP (15 kg/ha N)
		150 kg/ha SOA (30 kg/ha N)
Fungicide:	Seed trt:	Saltro Duo
	6 - Leaf	Prosaro 450mL/ha
	20% Bloom	Aviator Xpro 800mL/ha

All inputs of insecticides and herbicides were standard across the trial

Meteorological Data – South Australia Crop Technology Centre

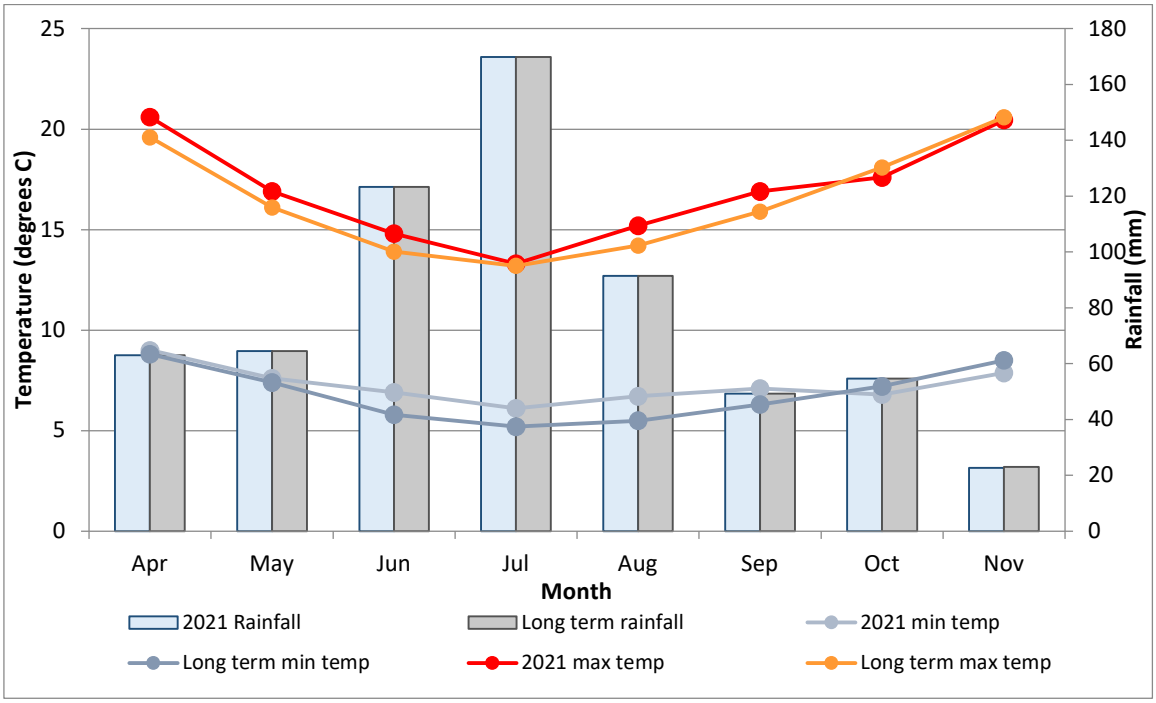

Figure 1. 2021 growing season rainfall and long-term rainfall, 2021 min and max temperatures recorded at Millicent (1877-2021) and long-term min and max temperatures recorded at Mount Gambier Aero (1941 to 2021) for the growing season (April to October). *Rainfall April to November= 638.5mm.*

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