

## Trial 2. Spring canola nutrition trial for hyper-yielding canola (FAR WAK C23-03)

**Objectives:** To determine the optimal nutrient management strategy for achieving hyper-yielding spring canola.

### Key points:

- Yield responses to applied nitrogen fertilizer plateaued at 75 kg N/ha (all treatments had 30 kg/ha N basal application) and similar yields were achieved beyond that rate.
- The addition of 5 t/ha of manure with no N applied lifted grain yield by 0.61 t/ha. There was no benefit of manure where 225 kg N/ha was applied.
- Increasing rates of nutrition gradually reduced oil concentration and increased grain protein concentration.

**Treatments:** Five nitrogen rates were applied using UAN and SOA. A sixth treatment had 5 t/ha of chicken manure applied. 30 kg N/ha and 15 kg P/ha using MAP and UAN was applied as the basal application for all treatments.

**Table 1.** Yield, protein, and oil of the Nutrition trial (t/ha) in Canola (45Y28RR) at Kojonup in 2023.

Applied Nitrogen (kg/ha) in Crop	Yield (t/ha)	Protein (%)	Oil (%)
1 0	2.37 b	17.78 d	48.9 a
2 75	2.79 a	18.70 bc	48.4 ab
3 150	2.87 a	19.33 ab	48.1 b
4 225	2.81 a	19.53 a	47.8 c
5 300	2.76 a	19.65 a	47.8 bc
6 0 + 5 t/ha Manure*	2.98 a	18.12 cd	48.7 a
7 225 + Inorganic*	3.05 a	19.62 a	48.1 bc
8 225 + 5 t/ha Manure*	3.05 a	19.92 a	47.5 c
<b>Mean</b>	2.83	19.10	48.2
<b>LSD P=0.05</b>	0.50	0.71	0.61
<b>P Value</b>	<0.05	< 0.05	<0.05

\*Chicken Manure expressed dry matter basis (3.0% Nitrogen, and 0.9% Phosphorus) = additional 100 kg N/ha and 27kg P/ha to replicate high fertility soils. Inorganic treatment applied mineral fertiliser equivalent of the N & P in manure.

**Table 2.** Trial input and management details

<b>Sowing date:</b>	<b>29 April 2023</b>	
<b>Target plant density:</b>	40 plants/m <sup>2</sup>	
<b>Canola Variety</b>	Pioneer 45Y28RR	
<b>Basal application:</b>	70 kg/ha MAP +72 L/ha UAN (30 kg N/ha, 15 kg P/ha)	
<b>Nitrogen:</b>	6 Leaf	50kg N/ha (UAN) +20 kg S/ha (SOA) (not for the Nil N)
	Bud Visible	The balance of nitrogen as per treatment (UAN).
<b>Fungicide</b>	6 - Leaf	Prosaro 450mL/ha
	20% Bloom	Aviator Xpro 800mL/ha

**Table 3.** Active ingredients and chemical loading (g/L) for products used.

<b>Name</b>	<b>Active 1</b>		<b>Active 2</b>		<b>Type</b>
<b>Fungicide</b>					
Aviator Xpro	Prothioconazole	150 g/L	Bixafen	75 g/L	EC
Saltro Duo	Pydiflumetofen	200 g/L	---	---	FS