Trial 7: Nitrogen nutrition for hyper yielding spring canola

Objectives: To determine optimum nitrogen nutrient management (including rate and timing) for hyper yielding spring canola.

Key Messages:

- The application of nitrogen as urea did not increase grain yield in this trial, with only the application of manure increasing yield. Manure applied with 225 kg/ha N yielded 0.55 t/ha more than the same rate of N applied alone.
- The reasons for the manure response are not clear, as the site had high background N and P levels and the response came over and above high application rates of both nutrients.
- There was no effect of nutrition on grain quality or lodging.

Treatments: Five nitrogen rates applied as urea with an equal split at 6-leaf and bud visible stage. A sixth treatment had 5t/ha chicken manure applied.

Table 1. Yield of the Nutrition trial (t/ha) in Canola (45Y28RR).

Nitrogen Rate	Grain Yield (t/ha)	Oil (%)	Protein (%)	Test Weight (kg/hL)	Lodging (1=standing, 9=flat)
Nil	4.52	48.8	18.6	64.2	1.4
75 kg/ha	4.43	49.4	18.2	64.3	1.6
150 kg/ha	4.56	49.3	18.2	64.1	1.5
225 kg/ha	4.47	48.8	18.8	64.5	2.1
300 kg/ha	4.49	48.8	18.9	64.3	1.7
225 kg/ha + Manure*	5.02	48.8	18.7	64.5	1.8
LSD (p<0.05)	*0.32*	*n.s.*	*n.s.*	*n.s.*	*n.s.*

*Chicken manure provided an extra 150 kg/ha N and 45 kg/ha P.

Table 2. Trial management details.

Sowing date:		**30 April**
Target plant density:		45 plants/m²
Canola Variety		Pioneer 45Y28RR
Basal Fertiliser:		130 kg/ha MAP (in-furrow) & 180 kg/ha Single Super (broadcast pre-sow).
Fungicide:	Seed	Saltro Duo
	6 - Leaf	Prosaro 450mL/ha
	20% Bloom	Aviator Xpro 800mL/ha

All inputs of insecticides and herbicides were standard across the trial

Trial 8: Disease management for hyper yielding winter canola

Objectives: To determine optimum fungicide management for hyper yielding winter canola.

Key Messages:

- Hyola Feast CL was badly lodged in this trial; therefore, it is difficult to make any major conclusions from it.
- There was no significant difference in grain yield between fungicide treatments.

- There was disease present in the trial, primarily powdery mildew as the dense, lodged canopy created a humid micro-environment for the disease. Powdery mildew infection was lowest in the treatment that included a Prosaro application at 50% bloom stage. This treatment also had the lowest level of sclerotinia stem rot.
- Sclerotinia stem rot and powdery mildew were present at higher levels than in either of the spring disease management trials.

Treatments: Six Fungicide strategies applied to a Hyola Feast CL winter canola.

Table 1. Influence of fungicide management strategy on winter canola grain yield (t/ha), oil concentration (%), powdery mildew infection (% of stem area infected) and Sclerotinia stem rot (% plants with main stem infection). Data not yet analysed for sclerotinia stem rot and powdery mildew.

Trt.	Seed	6 Leaf	20% Bloom	50% Bloom	Yield (t/ha)	Oil (%)	Powdery Mildew (%)	Sclerotinia (%)
1	**---**	---	---	---	2.49	43.0	36.3	7.6
2	**Maxim XL**	---	Aviator Xpro 800 mL/ha	---	2.83	44.1	19.5	3.5
3	**Saltro Duo**	---	Prosaro 450 mL/ha	---	2.43	44.1	11.2	4.5
4	**---**	---	Aviator Xpro 800 mL/ha	---	2.40	44.0	20.5	4.2
5	**Saltro Duo**	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	---	2.97	43.9	22.7	3.1
6	**Saltro Duo**	Prosaro 450ml/ha	Aviator Xpro 800 mL/ha	Prosaro 0.45 L/ha	3.06	43.9	5.5	0.5
				LSD 0.05	n.s.	n.s.	N/A	N/A

Table 2. Trial management details.

Sowing date:		**30 March**
Variety:		Hyola Feast CL
Target plant density:		45 plants/m^2
Sowing Fertiliser:		130 kg/ha MAP (in-furrow) & 180 kg/ha Single Super (broadcast pre-sow).
Nitrogen:	6 Leaf	113kg N/ha
	Bud Visible	113kg N/ha
Fungicide:		As per Table 1