Trial 2. Canola YieldMax (FAR SAC C22-02)

Objectives:

To determine the response to increased crop nutrition and to determine yield potential of leading commercial spring canola varieties.

Key findings:

- Yield potential in this trial was limited by a hailstorm on 12 December.
- High input management (including high rates of mineral fertiliser plus 5 t/ha pig manure) increased grain yield by 0.29 t/ha compared with low input (modest rates of mineral fertiliser only).
- The Clearfield varieties 45Y93 CL and 45Y95 CL had the highest yield at approximately 3.8 t/ha. The glyphosate and triazine tolerant varieties all yielded less than 3 t/ha.
- The high input management strategy had a small negative effect on grain value, dropping oil concentration by 0.8%. There were larger oil concentration differences between varieties ranging from 42.9% for 45Y95 CL to 45.9% for 45Y28 RR.
- Assuming a grain price of $700/tonne, gross income of 45Y95 CL was $2674 and the gross income of 45Y28 RR was $2015, highlighting the importance of yield over oil for income.

Treatments: High and low Nutrient Input strategies applied to six spring canola varieties.

Table 1. Influence of management strategy and variety on grain yield (t/ha).

	Management Level		
	Low Input 150 kg/ha N	**High Input 225 kg/ha N + M**	**Mean**
Cultivar	**Yield t/ha**	**Yield t/ha**	**Yield t/ha**
45Y93 CL	3.71 -	3.91 -	**3.81 a**
45Y95 CL	3.58 -	3.96 -	**3.77 a**
45Y28 RR	2.50 -	2.94 -	**2.72 bc**
Condor TF	2.80 -	3.13 -	**2.97 b**
Hyola Blazer TT	2.42 -	2.70 -	**2.56 c**
HyTTec Trifecta	2.75 -	2.87 -	**2.81 bc**
Mean	**2.96 b**	**3.25 a**	**3.11**
LSD Cultivar p = 0.05	0.32	**P val**	<0.001
LSD Management p=0.05	0.12	**P val**	<0.001
LSD Cultivar x Man. P=0.05	ns	**P val**	0.642

Table 2. Grain quality assessment- oil (%), test weight (kg/HL) & protein (%).

	Grain quality assessments		
Cultivar	**Oil (%)**	**Test Weight (kg/hL)**	**Protein (%)**
1. 45Y93 CL	43.6 cd	66.5 ab	19.8 b
2. 45Y95 CL	42.9 d	66.2 b	20.2 ab
3. 45Y28 RR	45.9 a	65.6 c	18.3 c
4. Xseed Condor RR	44.6 b	66.2 b	19.6 b
5. Blazer TT	43.8 c	66.4 b	20.5 a
6. HyTTec Trifecta	43.2 cd	66.9 a	20.4 a
LSD = 0.05	0.75	0.46	0.57
Cultivar p-Value	<0.001	0.001	<0.001
Nutrition			
1. Low Input	44.4 a	66.2 -	19.6 b
2. High Input	43.6 b	66.4 -	20.0 a
LSD = 0.05	0.36	ns	0.32
Nutrition p-Value	0.001	0.317	0.005

Table 2. Trial management details.

Sowing date:		10 May	
Plant population:		60 plants/m²	
Basal Fertiliser:		145 kg/ha MAP (15 kg/ha N)	
		Low Input	**High Input**
Nitrogen:	Basal		5 t/ha pig manure
	3-4-Leaf (22 Jun)	84 kg/ha ammonium sulfate	84 kg/ha ammonium sulfate
	6-leaf (5 Jul)	66.4 kg N/ha	104 kg N/ha
	Stem elongation/start of flower (28 Aug)	66.4 kg N/ha	104 kg N/ha
Total N Applied:		**165 kg N /ha**	**240 kg N/ha + Manure**
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