

Trial 3. HYC G.E.M Trial series

Objectives: To determine the response to increased crop inputs (fungicide and nitrogen) of a range of canola variety types.

Key points:

- Selecting the best varieties is important to achieve Hyperyielding canola:
 - HyTTec Trifecta (TT), 45Y28 RR and Xseed Condor (Truflex) were the highest yielding cultivars at both High and Low input.
- Extra inputs can increase yield potential in Hyperyielding canola:
 - High input management (extra fungicide and nitrogen) increased grain yield (compared to Low Input) by an average of 0.74 t/ha.
- The best cultivars also had the strongest response to increasing inputs:
 - The three highest yielding cultivars, HyTTec Trifecta, 45Y28 RR and Xseed Condor, increased yield by >0.9 t/ha with High Input management, compared with an average yield increase of 0.6 t/ha for the other six varieties.
 - The increase in yield was mostly due to extra nitrogen in the High Input treatment.
- Increasing inputs (nitrogen and fungicide) increased final (maturity) biomass and increased harvest index.
- High yielding varieties can also have high oil concentration:
 - Xseed Condor and HyTTec Trifecta had the highest oil concentration, increasing their potential gross income.

Treatments: Two management levels (combination of nitrogen and fungicide) applied to 9 canola varieties.

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

Cultivar	Phenology Flowering Date	Management Level			
		Low input Yield t/ha	High input Yield t/ha	Mean Yield t/ha	
Hyola 970CL (Winter)	2 October	3.35 g	3.88 cd	3.61	c
SF Nizza CL (Winter)	26 September	3.04 h	3.60 ef	3.32	d
SF Edimax CL (Winter)	29 September	2.79 i	3.41 fg	3.10	e
ATR Wahoo TT (Spring)	5 September	3.40 fg	4.00 c	3.70	c
HyTTec Trifecta (Spring)	28 September	4.03 c	4.96 a	4.49	a
SF Ignite TT (Spring)	2 September	3.66 de	4.37 b	4.01	b
45Y28 RR (Spring)	30 August	3.92 c	4.92 a	4.42	a
Xseed Condor (Spring)	24 August	3.94 c	4.84 a	4.39	a
Nuseed Diamond (Spring)	31 July	3.52 efg	4.28 b	3.90	b
Mean		3.51	4.25	3.88	
LSD Cultivar p = 0.05		0.19	P val	<0.001	
LSD Management p=0.05		0.07	P val	<0.001	
LSD Cultivar x Man. P=0.05		0.23	P val	0.019	

Winter – winter canola, Spring – spring canola.

A single application of Prosaro at 20% Bloom was enough to control most of the disease infection in this trial. Most of the yield improvement from the High Input management can be attributed to the higher rate of N (extra 60 kg/ha) applied. Nitrogen increased the final biomass by an average of 2.5

t/ha and increased harvest index by 0.023. This response to N is important for growers and agronomists managing crops for Hyperyields, that harvest index does not decline as biomass increases.

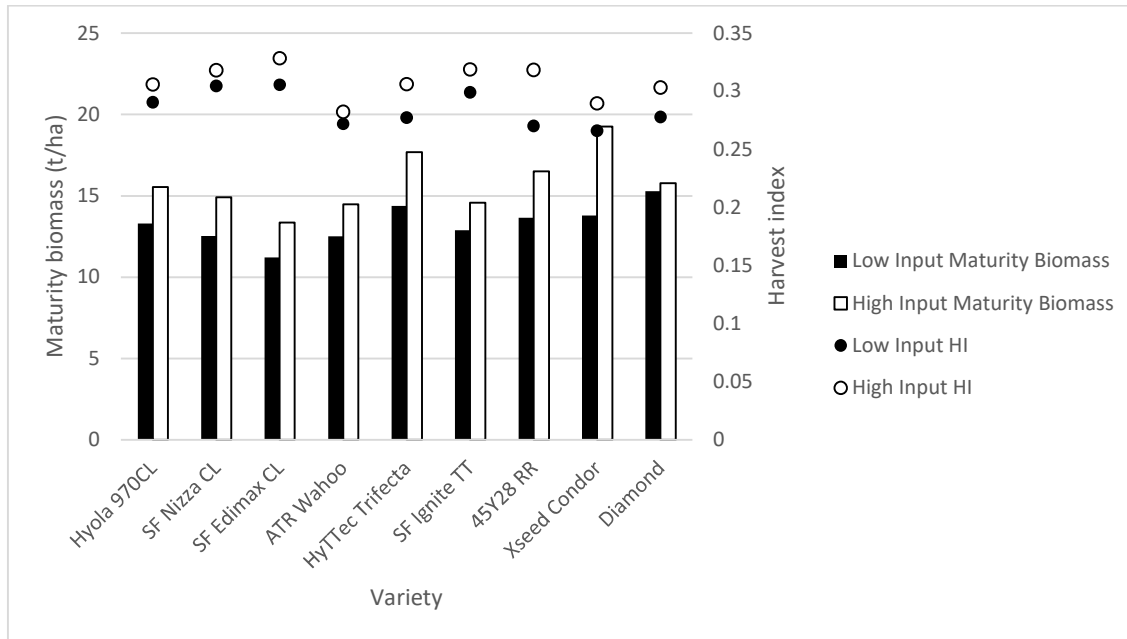


Figure 1: Effect of management strategy and variety choice on maturity biomass and harvest index.

LSD Maturity biomass = 1.56 t/ha

LSD HI = 0.016

Table 2. Influence of management strategy and variety on oil concentration (%).

Cultivar	Management Level			
	Low input	High input	Mean	
	Oil %	Oil %	Oil %	
Hyola 970CL (Winter)	47.7	47.4	47.6	c
SF Nizza CL (Winter)	49.0	48.6	48.8	b
SF Edimax CL (Winter)	47.8	47.8	47.8	c
ATR Wahoo TT (Spring)	48.4	47.8	48.1	c
HyTTec Trifecta (Spring)	49.9	49.1	49.5	a
SF Ignite TT (Spring)	46.9	46.5	46.7	d
45Y28 RR (Spring)	48.6	47.4	48.0	c
Xseed Condor (Spring)	50.2	49.2	49.7	a
Nuseed Diamond (Spring)	48.8	47.4	48.1	c
Mean	48.6	47.9	48.3	
LSD Cultivar p = 0.05	0.63	P val	<0.001	
LSD Management p=0.05	0.30	P val	<0.001	
LSD Cultivar x Man. P=0.05	ns	P val	0.318	

Table 3. Details of the management levels.

Sowing date:	17 April		
Plant population:		60 plants/m ²	

Seed Treatment:		Jockey + Poncho	
Basal Fertiliser:		130 kg/ha MAP (15 kg/ha N)	
		150 kg/ha SOA (30 kg/ha N)	
		Low input	High input
Nitrogen:	6-leaf	30 kg/ha	30 kg/ha
	Bud visible		30 kg/ha
	Start Flower		30 kg/ha
Total N Applied:		75 kg/ha	135 kg/ha
Fungicide:	30 May	Prosaro 0.45 L/ha	
	20% Bloom	Prosaro 0.45 L/ha	Aviator Xpro 0.8 L/ha
	50% Bloom		Prosaro 0.45 L/ha