

		Low Input	Mid Input	High Input
Nitrogen:	6-leaf	75kg N/ha	113kg N/ha	113kg N/ha
	Bud visible	75kg N/ha	113kg N/ha	113kg N/ha
Total N Applied:		150kg N/ha	226kg N/ha	226kg N/ha
Fungicide:	GS00	Maxim XL	Maxim XL	Saltro Duo
	6 Leaf	---	---	Prosaro 0.45L/ha
	20% Bloom	Aviator Xpro 0.80L/ha	Aviator Xpro 0.80L/ha	Aviator Xpro 0.80L/ha
	50% Bloom			0.45 L/ha Prosaro

Trial 4: HYC Spring G.E.M Trial series

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

Key Messages:

- 45Y95 CL was the standout variety in this trial with a mean yield (across treatments) of 6.43t/ha. This was 78% higher yielding than the open pollinated ATR Wahoo.
- 45Y95 CL grew very high biomass (18.65 t/ha) and had a high harvest index (0.36). It is rare to have such a high conversion of biomass to grain (HI) at such a high biomass level and is a fundamental driver of achieving hyper yields.
- 45Y95 CL had a high number of seeds per pod as well as a high number of pods/m². This compares to ATR Wahoo which had a high number of seeds/pod but a low number of pods/m²; and Condor TF which had a high number of pods/m², but a relatively low number of seeds/pod.
- The High Input Management was higher yielding than both the Low and Medium Input management. The yield increased compared to Medium Input which suggests that this was driven by disease control; however it was difficult to ascertain which disease was causing yield loss. Fungicide reduced disease levels, but most diseases were at a low level including sclerotinia.
- The RR/Truflex cultivars 45Y28 RR and Condor TF had the highest oil concentration with 48.8 and 48.3% respectively.
- Protein averaged 20.3%, meaning that 32.4kg/ha N was harvested per tonne of grain harvested.
- There was no effect of management on any of the grain quality parameters.

Treatments: Six spring varieties with three different management levels (combination of fungicide and N).

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

Cultivar	Low input	Medium input	High input	Mean
Grain yield (t/ha)				
45Y28 RR	4.64	4.81	5.15	4.87
Condor TF	5.26	5.27	4.96	5.16
45Y93 CL	5.48	5.55	5.78	5.60
45Y95 CL	6.44	6.17	6.69	6.43
ATR Wahoo	3.73	3.31	3.81	3.62

HyTTec Trifecta	4.68	5.27	5.65	5.20
Mean	5.04	5.06	5.34	
LSD Management	0.25	p value	0.034	
LSD Cultivar	0.36	p value	<0.001	
LSD Management * Cultivar	n.s.	p value	n.s.	

Table 2. Influence of management strategy and variety on oil concentration (%), test weight (kg/hL) and protein (%).

Cultivar	Oil %	Test Weight (kg/hL)	Protein %
45Y28 RR	48.8	64.6	18.6
Condor TF	48.3	64.6	19.9
45Y93 CL	45.7	65.3	20.5
45Y95 CL	46.2	64.1	20.5
ATR Wahoo	45.8	67.3	21.1
HyTTec Trifecta	46.8	64.9	21.1
Mean	47.0	65.1	20.3
LSD Cultivar*	0.84	0.44	0.56

*Management and the interaction between cultivar and management were not significant, therefore data only shown for cultivar effects.

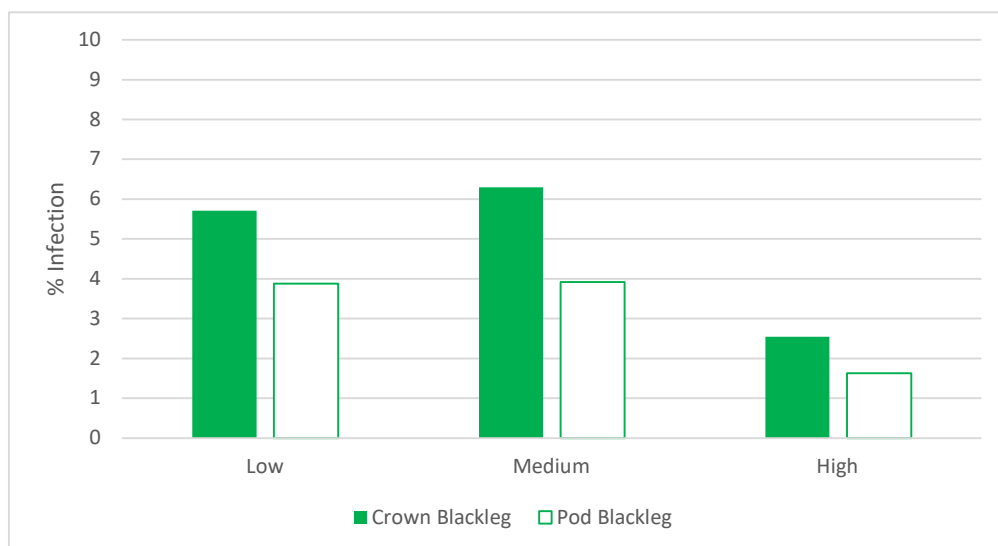


Figure 1: Effect of management strategy on crown canker blackleg infection (cross section of 20 stems at ground level) and pod blackleg infection (% pod area infected).

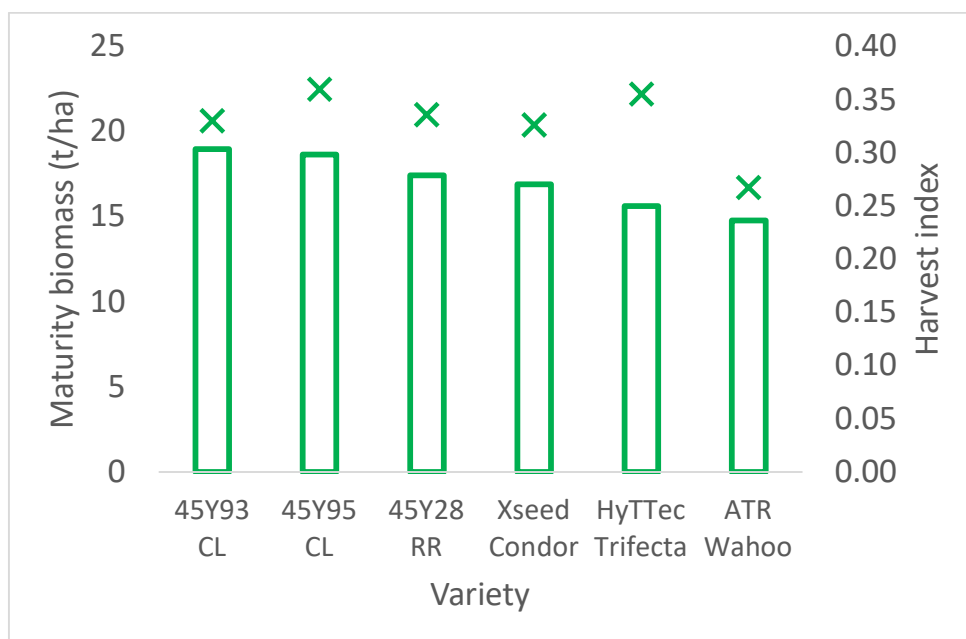


Figure 2: Maturity biomass (bars) and harvest index (X) of six canola cultivars in Wallendbeen GEM trial 2021.

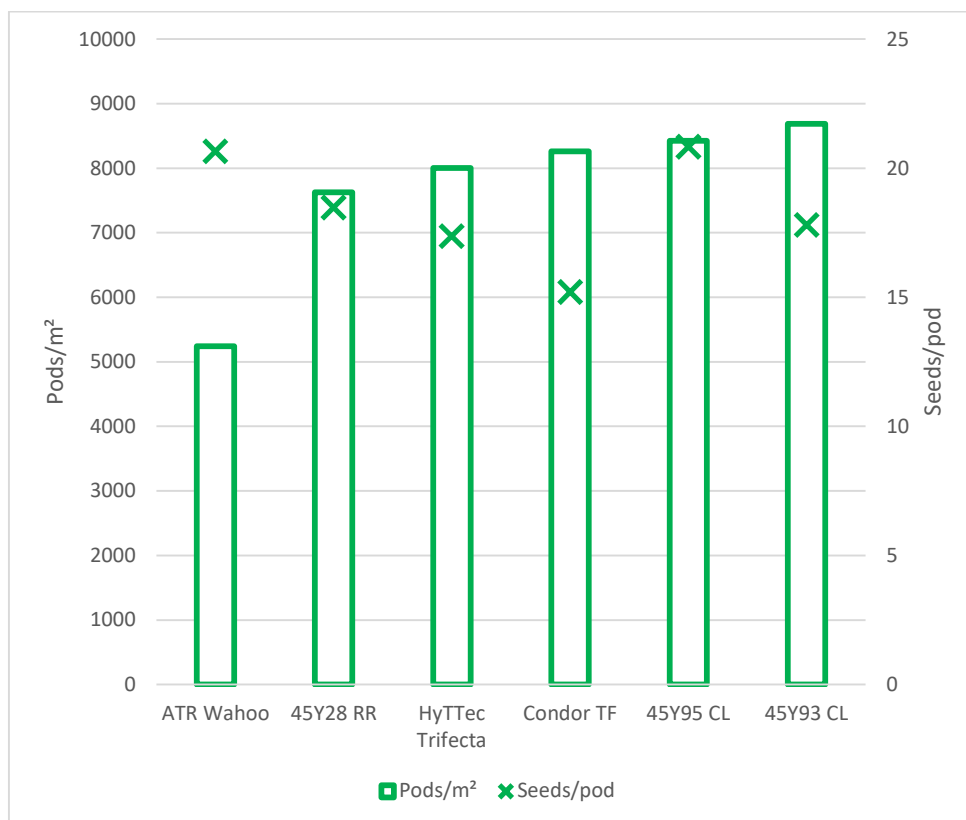


Figure 3: Yield components of six cultivars in Wallendbeen GEM trial 2021 (Measured in high input treatment).

Table 3. Trial management details.

Sowing date:		30 April		
Target plant density:		45 plants/m ²		
Basal Fertiliser:		130 kg/ha MAP (in-furrow) & 180 kg/ha Single Super (broadcast pre-sow).		
		Low Input	Mid Input	High Input
Nitrogen:	6-leaf	75kg N/ha	113kg N/ha	113kg N/ha
	Bud visible	75kg N/ha	113kg N/ha	113kg N/ha
Total N Applied:		150kg N/ha	226kg N/ha	226kg N/ha
Fungicide:	GS00	Maxim XL	Maxim XL	Saltro Duo
	6 Leaf	---	---	Prosaro 0.45 L/ha
	20% Bloom	Aviator Xpro 0.80L/ha	Aviator Xpro 0.80L/ha	Aviator Xpro 0.80L/ha
	50% Bloom			Prosaro 0.45 L/ha

Trial 5: Plant density for hyper yielding spring canola

Objectives: To determine optimum plant density for hyper yielding spring canola

Key Messages:

- There was no effect of plant density on grain yield of 45Y28 RR.
- There was no significant lodging in 45Y28 RR even at the highest plant densities.

Treatments: 45Y28 RR canola sown at four seeding rates to target 15, 30, 50 and 75 plants/m².

Table 1: Effect of plant density on grain yield, oil and protein of 45Y28 RR.

Target Plant Density	Achieved Plant Density	Grain Yield (t/ha)	Oil (%)	Protein (%)
15 plants/m ²	21 plants/m ²	4.75	48.5	18.3
30 plants/m ²	36 plants/m ²	4.78	48.2	18.9
50 plants/m ²	58 plants/m ²	4.83	48.5	18.8
75 plants/m ²	81 plants/m ²	4.62	48.7	18.9
LSD (<i>p</i><0.05)		<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>

Table 2. Trial management details.

Sowing date:		30 April
Variety:		45Y28 RR
Target plant density:		As per treatments
Sowing Fertiliser:		130 kg/ha MAP (in-furrow) & 180 kg/ha Single Super (broadcast pre-sow).