

2.5.2 Canola variety trials - Inverleigh, Vic

Location:

Inverleigh Research Site.

Funding:

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Researchers:

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Take home messages:

- Triazine Tolerant varieties had an average yield of 2.28 t/ha and Clearfield varieties yielded an average of 1.93 t/ha. The highest yielding TT variety was Argyle with 3.03 t/ha; the highest yielding Clearfield variety was 45Y77 with 2.01 t/ha.
- Four of the nine TT varieties and one of the four Clearfield varieties had oil levels below 42%.
- The Clearfield varieties demonstrated much greater early vigour compared to the TT varieties.
- Moderate black leg development was observed in susceptible varieties at the Inverleigh trial site.

Background/Aim:

Canola is a commonly used break crop in the cereal rotation. It has the ability to return a highly profitable gross margin when prices and yield allow. A wide selection of variety options are presented when considering canola. These include Triazine Tolerant, Clearfield, Conventional and now Round Up Ready varieties. Key features to consider when considering canola varieties are yield potential, oil content, black leg resistance, early vigour and suitability of maturity to local season length. The canola variety trial at Inverleigh compares a number of commercially available Triazine Tolerant and Clearfield canola varieties.

Paddock history: 2006: Wheat 2007: Pulses

Soil type: Sandy clay loam

Diseases:

There was mild black leg development in susceptible canola varieties at the Inverleigh trial site for the 2008 season.

Soil nutrients:

N = 17mg/kg (0-10cm) + 8.3mg/kg (10-60cm),
P = 54mg/kg (Colwell),
K = 0.45 Meq/100g,
S = 11mg/kg,
pH (CaCl₂) = 4.7

Trial information:

Trial design consisted of a replicated randomised block design using 4 repetitions. Plot lengths were 12 metres long and 1.45m wide. Rainfall was highly variable throughout the season, with a wet winter, then very dry Spring. Late rainfall in mid December did not contribute to the yield result of this trial.

Treatment list:

Nine current varieties of Triazine Tolerant canola and four current varieties of Clearfield canola were trialed at the Inverleigh research site.

Sowing rate:

Seeding rate based on seed size with a desire to establish 80 plants/m².

Sowing date: 30/5/08 TT and Clearfield

Harvest date: 4/12/08 TT and Clearfield

Tillage type: This trial was seeded with the SFS cone seeder using 2.5cm knife points.

Fertiliser:

- 30/5/08 100kg/ha MAP (TT and Clearfield)
- 12/6/08 50 kg N/ha (urea) (TT and Clearfield)

Herbicides: TT Canola

- 28/5/08 Round Up @ 2.0L/ha + Striker @ 0.15L/ha + Trifluralin @ 1.5 L/ha
- 10/6/08 Simazine @ 2.5 L/ha
- 27/7/08 Atrazine @ 1.5 L/ha + Select @ 0.25 L/ha + Hasten @ 1.0 L/ha

Clearfield Canola

- 28/5/08 Round Up @ 2.0L/ha + Striker @ 0.15L/ha + Trifluralin @ 1.5 L/ha
- 4/8/08 Intervix @ 0.45 L/ha + Select @ 0.3 L/ha + Hasten @ 1 L/ha

Insecticide: 19/6/08 Slug Out @ 3.0 kg/ha (TT and Clearfield)

Desiccant:

- 28/11/08 Reglone @ 2.0 L/ha (TT and Clearfield)

Results and discussion:

Argyle TT topped the Triazine Tolerant (TT) canola variety trial at Inverleigh with a yield of 3.03 t/ha. This was 133% of the 2008 site mean. Thunder and Hurricane were the lowest performers during 2008 recording 1.68 t/ha, only 74% of the site average. Marlin recorded a yield slightly above the site average and has demonstrated that it is reliable over a three year period, particularly in dry years. In a season with a longer finish we could expect varieties such as Marlin and Flinders to have significantly improved yields.

Rottnest had the highest oil percentage of the TT varieties with 43.95%. Four of the nine varieties would incur a discounted canola price at harvest as they did not achieve an oil percentage above 42%.

Moderate black leg development was observed in susceptible varieties. This may be why Thunder yielded poorly as it has a moderate rating to blackleg. Resistant to Moderately Resistant varieties such as ATR409 and Argyle yielded well, however this cannot be attributed to black leg resistance alone.

Table 1: Triazine Tolerant (TT) Canola, Inverleigh 2008.

Variety	Yield (t/ha) ¹	% of Site Mean	3 Yr Mean (2 Yr)	Oil (%)	Maturity
Argyll TT	3.03 a	133	-	41.40 bcd	Mid
Tawriffic	2.48 b	109	-	42.60 b	Early-Mid
ATR409	2.45 b	107	-	40.80 d	Mid
Flinders	2.45 b	107	102	40.30 d	Mid-Late
Marlin	2.33 b	102	107	42.20 bc	Mid-Late
Storm TT	2.23 b	98	-	41.27 cd	Mid
Rottnest	2.18 b	96	(103)	43.95 a	Early-Mid
Hurricane TT	1.68 c	74	-	42.45 bc	Early-Mid
Thunder TT	1.68 c	74	86	42.43 bc	Mid-Late
Mean	2.28			41.93	
LSD P=0.05	0.35			1.33	
CV	10.69			2.28	

¹ Means followed by the same letter do not significantly differ (P=0.05, LSD)

There was no significant difference found between Clearfield canola varieties at the Inverleigh site in 2008. A mean yield of 1.93 t/ha was observed and 45Y77 was the highest with 2.01 t/ha. The mid maturity variety 46Y81 achieved the highest oil percentage with 43.68%. Although 45Y77 achieved the highest yield, it was the only variety of have an oil percentage below 42%.

Through the early stages of the growing season, the Clearfield varieties demonstrated much greater vigour compared to the TT varieties. This can be a useful tool against predation in the early stages of the season, but may also increase stored water use, as the results show, the TT varieties have shown a yield advantage (comparison only).

Table 2: Clearfield Canola, Inverleigh 2008

Variety	Yield (t/ha) ¹	% of Site Mean	3 Yr Mean (2 Yr)	Oil (%)	Maturity
45Y77	2.01 a	105	103	41.26 b	Early-Mid
46Y81	1.95 a	102		43.68 a	Mid
46Y78	1.88 a	98	-107	42.34 ab	Mid-Late
Hyola 571CL	1.86 a	97		42.4 ab	Early-Mid
Mean	1.93			42.42	
LSD P=0.05	0.40			1.47	
CV	15.03			2.58	

¹ Means followed by the same letter do not significantly differ (P=0.05, LSD)

Conclusion:

Clearfield canola varieties demonstrated good early crop vigour compared to Triazine Tolerant varieties. There was a clear yield difference by harvest, where TT varieties averaged 2.28 t/ha compared to 1.93 t/ha in the Clearfield varieties. The highest yielding canola variety at Inverleigh was Argyle with 3.03 t/ha.

Four of the nine TT varieties had oil percentages below the standard 42%, where only one of the Clearfield varieties was below this grade. Frost did not appear to impact this trial when compared to local district commercial paddocks.