

PART B: MFMG Canola Variety Trial

Katrina Copping, walteela410@gmail.com

Trial Manager: Amanda Pearce, SARDI, Amanda.pearce@sa.gov.au

Two MacKillop Farm Management Group (MFMG) canola variety trials were sown in 2017 at Millicent. These trials were conducted to enable growers to evaluate a selected number of varieties under specific local conditions. There are no NVT Canola sites in the lower South East and MFMG growers identified that it was important to evaluate canola varieties in the high rainfall zone of the South East.

General comments around MFMG trial results in 2017

The site was sown 12 May (seeding rate; 60 plants/m²) and harvested on the 14 December. In the Triazine Tolerant variety trial (Table 1), site mean yield was 3.03 t/ha with yield varying from 3.65 t/ha to 2.55 t/ha. HyTTech Trophy out yielded all varieties at Millicent except NCH15T092 (3.49 t/ha) and Hyola 650 TT (3.32 t/ha). This early to mid-maturing hybrid canola was in NVT for the first time in 2017, with commercial release in 2018.

Table 1: MFMG Millicent 2017 Triazine Tolerant canola variety trial.

Variety	Maturity	Yield t/ha	% Site Mean	Moisture (%)	Oil (%)	Protein (%)
HyTTech Trophy	EM	3.65	121	7.6	43.7	21.2
NCH15T092		3.49	115	7.2	44.2	21.3
Hyola 650 TT	ML	3.32	110	7.5	44.6	21.4
Hyola 559 TT	EM	3.11	103	7.3	46.0	20.4
Hyola 750 TT	L	3.11	103	7.6	44.3	21.0
Wahoo TT	M	2.71	90	7.6	44.5	20.8
ATR Mako	EM	2.70	89	7.5	44.0	22.2
Pioneer 45T01TT	M	2.61	86	7.4	45.3	21.9
Monolo 515TT	ML	2.55	84	7.2	44.9	21.3

Site Mean	3.03
P Value (0.05)	<.001
I.s.d	0.378
CV (%)	0.4

The yields for the Clearfield (imidazolinone tolerant) variety trial (Table 2) averaged 3.67 t/ha and ranged from 4.26 t/ha down to 2.88 t/ha. The highest yielding variety was 45Y91CL, however this trial was variable (cv% 14.81) and there was no significant difference in yield between the five varieties sown.

Table 2: MFMG Millicent 2017 Clearfield (imidazolinone tolerant) canola variety trial.

Variety	Maturity	Yield		Moisture (%)	Oil (%)	Protein (%)
		t/ha	% Site Mean			
45Y91 CL	M	4.26	116	7.4	44.6	21.0
Banker CL	M	3.97	108	7.5	43.8	22.3
Archer CL	L	3.73	102	7.7	43.1	22.0
45Y86 CL	M	3.53	96	8.8	43.0	21.6
Hyola 575 CL	ME	2.88	78	8.0	44.2	20.3

Site Mean	3.67
P Value (0.05)	0.219
I.s.d	NS
CV (%)	14.81



PART C: MFMG Canola Nutrition Trial

Katrina Copping, walteela410@gmail.com

Trial Manager: Amanda Pearce, SARDI, Amanda.pearce@sa.gov.au

KEY MESSAGES

- MFMG funded a canola nutrition trial at Millicent to evaluate N and S.
- The treatments resulted in no difference in yield, protein or oil content at Millicent.

Background

In 2017 MFMG funded canola nutrition trials at Millicent. This high rainfall area is characterised by fertile soil types and a long growing season. Early nitrogen nutrition in canola is important for achieving full ground cover and plant vigour prior to bud formation. This improves crop competition against weeds, and pests such as slugs. Having adequate nitrogen (N) supply is also critical between the beginning of stem elongation and the end of flowering when maximum dry matter and nitrogen accumulation

occurs. However, too much vegetative growth early in the season can run the risk of lodging and running short of moisture during grain fill'. The total amount of nitrogen applied to canola has often been considered to be more important than the timing; the Millicent trial evaluated different N rates and application timings and sulphur (S) rates on canola under specific local conditions.

Trial Design

The Millicent trial was sown on 12 May. The Clearfield (imidazolinone tolerant) canola variety, 45Y91CL, was used in the trials (seeding rate 60/plants m²). Fertiliser applied at sowing was 140kg/ha 18:13:0:10. Farmer practice was an application of 150 kg/ha of Sulphate of Ammonia (SOA).

Fertiliser treatments were applied at two different timings; 1 August 2017 and 14 September. A single application of either Urea or SOA on 1 August and a split application of Urea or SOA on 1 August plus Urea on 14 September were compared (Table 1). Soil test results for the site are given in Table 2.

Table 1: The five treatments evaluated at Millicent canola nutrition trials, products applied and rates applied at different timings.

Treatments		1st August 2017 1st Top Dress	14th September 2017 2nd Top Dress
Treatment 1	Farmer Practice	NIL	NIL
Treatment 2	Farmer Practice Plus	100 kg/ha SOA	100 kg/ha Urea
Treatment 3	Farmer Practice Plus	100 kg/ha SOA	NIL
Treatment 4	Farmer Practice Plus	80 kg/ha Urea	100 kg/ha Urea
Treatment 5	Farmer Practice Plus	80 kg/ha Urea	NIL-

Table 2: Trial site soil test results.

Depth	Colour	Gravel	Texture	Ammonium Nitrogen	Nitrate Nitrogen	Phosphorus Colwell	Potassium Colwell	Sulphur	Organic Carbon	Conductivity	pH Level (CaCl2)	pH Level (H2O)
cm		%		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	%	dS/m	pH	pH
0-10	GR	0	3.5	5	63	48	386	66.1	6.31	0.452	7.2	7.7

* Soil testing by CSBP

Results

The mean site yield was 3.71 t/ha. There were no significant yield differences between the treatments with Treatment 1 (farmer practice) having the highest yield of 4.07 t/ha. Seed protein and oil content remained fairly constant in response to treatments and were not significantly different.

Nitrogen management decisions for canola should be based on an understanding of crop demands and soil test results. Paddock history, market pricing, seasonal outlook and cost of fertiliser can be used to refine the decision¹.

Table 3: Millicent Clearfield canola nutrition yield, oil and protein content.

	Yield	Moisture	Oil	Protein
Variety	t/ha	% Site Mean	(%)	(%)
Treatment 1	4.07	110	7.2	45.1
Treatment 2	3.54	95	7.5	44.6
Treatment 3	3.29	89	7.2	45.0
Treatment 4	3.66	99	7.1	45.1
Treatment 5	3.99	108	7.2	45.0
Site Mean	3.71		7.2	45.0
P Value	0.183		0.89	0.228
I.s.d	NS		NS	NS
cv (%)	7.7		0.9	0.4

NS = Not significant

REFERENCES

1. Farlow, C., Menhenett, L., Kreeck, G. and Hilsdon, E. (2013). Does Nitrogen application in canola matter? Southern Farming Systems 2013 Growing Season Trial Report, pp 72 – 75. Accessed on-line (<https://www.farmtrials.com.au/trial/16172>).

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