

# Canola Systems Trial

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<b>Purpose:</b>	To demonstrate the relative performances of the three canola options available to Western Australian growers
<b>Location:</b>	Badgingarra (Andrew Kenny's property)
<b>Soil Type:</b>	Gravelly white sand
<b>Rotation:</b>	2009 wheat
<b>GSR:</b>	300mm

## BACKGROUND

Roundup Ready canola is a third canola system now being grown in Western Australia. Like the other two systems it has its strengths and weaknesses, but at present almost all supportive data for the system were gathered internationally and interstate. This trial is part of an ongoing project initiated last season designed to gather local agronomic and economic data of Roundup Ready canola compared to Triazine tolerant and Clearfield canola grown under common conditions.

## TRIAL DESIGN

The design has four randomised complete blocks of six plots each. The six plots in each replicate consist of two Triazine tolerant (TT) varieties, two Clearfield (CL) varieties and two Roundup Ready (RR) varieties

**Plot size:** Six rows x 10 metres

**Repetitions:** 4

**Machinery:** Small plot seeder, knife point and press wheel

**Crop details:** Canola, all open pollinated lines

TT varieties: ATR-Cobbler (Nuseed) and CB Tanami (CBWA)

CL varieties: 44C79 (Pioneer) and 43C80 (Pioneer)

RR varieties: GT-61 (Nuseed), GT-Cougar (Nuseed)

Seeded at 3.2 kg/ha on 21<sup>st</sup> May 2010

**Fertiliser:** **At seeding:** 150 kg/ha MAXam (topdressed); IBS and 100 kg/ha Vigour Atlas (banded below the seed)

**Post** (8/8/10 and 8/9/10): 100 kg/ha N:S 5:1 (top dressed)

**Herbicide:** **Pre-seeding** (20/5/10): IBS knockdown cocktail that included Roundup PowerMAX @ 2 L/ha, TriflurX @ 2 L/ha, Chlorpyrifos @ 1 L/ha and Alphacypermethrin @ 400 mL/ha.

### System-specific herbicide treatments:

**IBS timing, 21<sup>st</sup> May** (just before sowing):

- TT canola: Atradex WG @ 1.1 kg/ha

**2-leaf timing, 22<sup>nd</sup> June** (crop 20% 2-leaf, 50% 3-leaf and 30% 4-leaf):

- TT canola: Atradex WG @ 1.1 kg/ha + Bonza @ 1 % v/v

- CL canola: Intervix @ 600 mL/ha + Supercharge @ 0.5 % v/v
- RR canola: Roundup Ready Herbicide @ 900 g/ha

**6-leaf timing, 19<sup>th</sup> July** (crop 20% 5-leaf, 20% 6-leaf, 50% 7-leaf and 10% 8-leaf):

- TT canola: Havoc @ 300 mL/ha + Transit @ 300 mL/ha + Supercharge @ 1 % v/v
- CL canola: Havoc @ 300 mL/ha + Transit @ 300 mL/ha + Supercharge @ 1 % v/v
- RR canola: Roundup Ready Herbicide @ 900 g/ha

## RESULTS & DISCUSSION

Intermittent prevailing dry conditions experienced through the growing season probably impacted negatively on the residual activity of Atradox WG and Intervix in the TT and CL canola systems respectively, while resistance to Group A and Group B Herbicides would also have been a contributing factor.

Final weed control ratings (out of 10):

- Roundup Ready canola system – 9.9
- Triazine Tolerant canola system – 7
- Clearfield canola system – 7.5

The trial was harvested 5<sup>th</sup> November (168 days after sowing). Yield data are shown below. The high yields and oil content probably reflect timely rain rather than a particularly good season. There is some discrepancy between the yields of the trial and the paddock average harvested by Andrew. The harvest contractor is confident that the figures reflect the true yield for the site and suggest that this area of the paddock was possibly a high yielding area compared to other areas of the paddock, or that the impact of small plot water harvesting may have played a role. The trial is more about relative performance than actual performance: on average the RR system yielded 38 percent higher than the TT system and 15 percent higher than the CL system.

### ***Yield data***

Variety	Crop yield t/ha	Moisture %	Oil %	Protein %
RRC GT-61	2.917 ab	6.4 ab	45.2 a	20.3 b
RRC Cougar	3.021 a	6.1 c	45.2 a	19.4 c
CL 44C80	2.500 bc	6.3 ab	45.1 a	20.0 b
CL 44C79	2.680 abc	6.4 ab	45.3 a	21.3 a
TT Tanami	1.970 d	6.4 a	43.4 b	21.0 a
TT Cobbler	2.311 cd	6.2 bc	45.0 a	20.2 b

LSD (P=.05)

0.476

0.2

1.1

0.6

CV

12.310

2.1

1.6

1.9

Means followed by same letter do not significantly differ (P=.05, LSD)

Gross margins, total system specific input costs and net returns are shown in the table below.

NOTE: These system specific costs and net returns do not include other input costs common to all three systems (eg the costs of knockdown treatments, fertilizers and insecticides, swathing costs, and harvesting and haulage costs, etc).

### **Gross margins and net returns per hectare**

VARIETY	YIELD (kg/ha)	Percent Oil	Gross margin with bonification adjustments <sup>1</sup>	System specific costs by trial <sup>2</sup>	Net return (on system specific costs using bought seed)	Net return (on system specific costs using farmer kept seed) <sup>3</sup>
GT-61	2917	45.2	1861.35	137.8	1723.55	-
Cougar	3021	45.2	1927.71	139.18	1788.53	-
43-C-80	2500	45.1	1608.13	133.66	1474.47	1508.17
44-C-79	2680	45.3	1723.91	133.66	1590.25	1623.95
Tanami	1970	43.4	1239.73	106.8	1132.93	1166.63
Cobbler	2311	45	1486.55	106.8	1379.75	1413.45

<sup>1</sup> Based on a CAN1 price of \$620, a CANGM price of \$615, standard oil bonification, but assumes clean seed (ie no Addmix penalty)

<sup>2</sup> Includes herbicide costs, adjuvant costs (based on 60 L/ha spray volume), application costs (\$7/ha/application), purchased seed costs (\$12/kg TT & CL, \$15/kg RR, and \$25/kg hybrid), RR grain technology fee (\$3/kg), RR royalty fee (\$13.20/ton delivered seed)

<sup>3</sup> Based on assumed cost of \$1.5/kg for farmer kept seed

*The system specific costs were based on the following assumptions:*

- TriflurX: \$6.50 per litre
- Atradex WG: \$7.50 per kg
- Roundup Ready Herbicide: \$9.00 per kg
- INTERVIX: \$75 per litre
- Havoc (clethodim): \$15 per litre
- Transit (clopyralid): \$45 per litre
- Hasten: \$7 per litre
- Supercharge: \$8.63 per litre
- Application costs: \$7 per hectare
- RR open pollinated seed: \$15 per kg
- TT & CL open pollinated seed: \$12 per kg
- Farmer saved seed: \$1.5 per kg
- RR Technology grain fee: \$3 per kg purchased seed
- RR royalty fee: \$13.20 per ton of grain delivered
- CAN1 = \$620 per ton, CANGM \$615 per ton
- Normal bonifications

System specific input costs used in calculations in the table above provide a ball park summary of specific costs associated with each system. They are not hard and fast figures, to be disputed. It is appreciated that each and every item is subject to negotiation with suppliers so readers are encouraged to re-work the figures to suit their experience and anticipated costs for 2011.

The trial demonstrates that in this instance growers would have on average an additional \$500 per hectare to meet other costs when growing RR canola over TT canola (purchased

seed) or an additional \$465 per hectare over TT canola (using farmer saved seed – assuming that the same yields are obtained for these TT crops).

Again in this instance growers would have on average an additional \$225 per hectare to meet other costs when growing RR canola over CL canola (purchasing all seed) or an additional \$190 per hectare over CL canola (using farmer saved seed).

These additional earnings per hectare are even more attractive when one considers the fact that the level of weed control achieved by the RR system was significantly better than that achieved by the other two systems.

#### **ACKNOWLEDGEMENTS/ THANKS**

Andrew Kenny for his cooperation in giving up a portion of his paddock for this trial.© Nufarm Australia Limited, 2010. All rights reserved