3.6 Other Cropping Trials

3.6.1 Canola technology systems trial - Ross Bridge, Vic

Location:
Ross Bridge, Vic.

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Funding: Pioneer Hi-Bred Australia

Researchers:
Mark Steele and Rohan Wardle, SFS for conduct of trial & AOV analysis of results.

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Background/Aim:
New herbicide-tolerant canola varieties need to be thoroughly tested across a number of seasons. This trial differs from other comparative crop variety testing in that it evaluates commercially available canola varieties managed under their different technology system recommended practices. The management inputs in the trial is based on the objective to control weeds without compromising crop yield.

Take home messages:
- Average site canola yield in the trial was 1.24 t/ha.
- The dry spring and late spring frosts significantly reduced yield potentials.
- The top yielding canola was the new 46Y81 (CL) hybrid.
- The average yield of the commercial Clearfield hybrids was not significantly different to the Roundup Ready hybrid tested.
- The Roundup Ready hybrid was 34% or 0.46 t/ha higher yielding than the TT check variety.
- Weed pressure at the site was low.

Trial Design:
A replicated randomized block design consisting of 3 replicates and three herbicide tolerant systems; triazine tolerant (TT), CLEARFIELD and the new Roundup Ready (RR). Varieties and hybrids (where available) were also compared. The trial was located within a commercial paddock of 46Y20 (RR) hybrid. See table 1 for paddock and herbicide application details.

Rainfall (mm): Willaura 2008
Annual: 437[1]mm
GSR (April - November): 278mm

[1] 10th lowest percentile. Long term (1903-2008) mean annual rainfall 541 mm

Previous Crop: Barley

Sowing Date: 22nd May 2008

Herbicide Spray Date: 13th August 2008

Harvest Date: 8th December 2008

Table 2: Herbicide application in each technology system

	Herbicide Application	
Canola Technology System	**First application (6 leaf)**	**Second application (bud)**
Triazine Tolerant	1.5 kg/ha Atrazine + 300 ml Select + 1% Adigor	300 ml/ha Lontrel
CLEARFIELD	600 ml Intervix + 1% Bonza	300 ml/ha Lontrel
Roundup Ready	0.9 kg/ha Roundup	

Above: TT Canola flanked by Clearfield hybrids on all sides in trial at Ross Bridge, Vic

Results and discussion:
The results of this trial seen in table 2, provides a 'snapshot' of the commercially relevant performance advantage of the new Clearfield and Roundup Ready canola hybrids compared to TT canola.

The early vigour of the Clearfield and Roundup Ready hybrids allowed stronger plants and quicker canopy closure than the TT canola. Research has shown the yield potential of canola is determined within the first few weeks.

Timing of herbicide application in this trial was later than ideal.

The trial only compared canola varieties in a low weed pressure environment; it did not account for the 'fit' of the alternative herbicide tolerant technologies into an on-farm agricultural system (where time of sowing, soil type, weed type and populations, tillage and sowing methods, fertility and moisture availability all need to be considered).

Table 2: Canola harvest oil yields (t/ha)

Canola Type		Yield (t/ha)			Oil Content
Technology System	**Variety**	**Average**	**Minimum**	**Maximum**	**%**
Triazine Tolerant	Bravo TT	0.91 e	0.83	1.03	42.2
Clearfield	44C79	1.13 cde	0.94	1.14	42.7
Clearfield	45Y77 hybrid	1.28 a-d	1.25	1.45	42.3
Clearfield	46Y78 hybrid	1.25 bcd	1.23	1.29	43.8
Clearfield	46Y81 hybrid	1.47 ab	1.09	1.68	45.4
Roundup Ready	46Y20 hybrid	1.38 abc	1.06	1.55	43.8
LSD P=0.05		**0.3185**			
CV		**13.91**			

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

Summary:
Canola growers now have a wider choice of weed management technology with the release of Clearfield and Roundup Ready hybrids. Both new systems add flexibility to control weeds without compromising yields compared to TT canola.

Above: Commercial crop of Roundup Ready hybrid canola at Ross Bridge, Vic

Above: Depth of podding in 46Y20 (RR) canola at Ross Bridge, Vic