

Crop comparison after wheat and canola

Author: John Sykes

Contact No: 02 6023 1666

Organisation: John Sykes Rural Consulting

Location: Balldale
Growing Season Rainfall:
 Annual: 232 mm
 GSR: 166 mm
Soil:
 Type: Red Chromosol
 pH (H₂O): 4.9
 P (Colwell): 42 mg/kg
 Deep Soil N: 82 kg/ha
Sowing Information:
 Sowing date: 28/6/2005
 Fertiliser: 90 kg/ha MAP
Row Spacing: 180 mm
Paddock History:
 2006 – Wheat
 2005 – Wheat
 2004 – Canola
Plot Size: 1.5 m x 16 m
Replicates: 4

Key messages:

- Wheat on wheat following canola is an alternative that will enable more cereal crop to be grown in a rotation.
- Under dry conditions there were no responses to additional nitrogen or fungicide treatments except in barley.
- Alternative crops such as canola and lupins yield very poorly in drought seasons.

Aim:

To test if wheat can be successfully grown after wheat and canola and to assess if wheat was the best crop to grow at this point in the rotation.

Method:

A replicated experiment was established using similar treatments to 2004 and 2005.

Results:

Table 6: Yield (t/ha) and return (Gross Margin or GM in \$/ha) of the 2006 crop comparison experiment

Crop	40N		80N		40N+Fungicide		80N+Fungicide	
	Yield (t/ha)	GM (\$/ha)	Yield (t/ha)	GM (\$/ha)	Yield (t/ha)	GM (\$/ha)	Yield (t/ha)	GM (\$/ha)
Wheat	1.0	59	0.8	-17	0.8	3	0.7	-67
Triticale	0.9	58	0.9	10	0.9	41	0.6	-97
Barley	1.1	84	1.1	52	1.5	163	1.3	73
Canola	0.2	-154	0.1	-199	0.2	-182	0.2	-224
Lupins	0.2	-104						
Yield LSD (P<0.05) 0.24 t/ha								

Table 7: 2004/06 Average yield (t/ha) and return (Gross Margin or GM in \$/ha) of the crop comparison experiment

Crop	Farmer ¹		Nitrogen ²		Nitrogen+Fungicide ³	
	Yield (t/ha)	GM (\$/ha)	Yield (t/ha)	GM (\$/ha)	Yield (t/ha)	GM (\$/ha)
Wheat	1.9	157	2.6	262	3.0	319
Triticale	1.9	148	3.3	374	3.4	373
Barley	1.7	92	2.8	268	3.1	295
Canola*	0.8	48	1.3	202	1.2	87
Lupins*	0.7	47				
Yield LSD (P<0.05) 0.31 t/ha						

1- Normal Farm management. P applied at 20 kg/ha, N at 53 kg/ha including 40 kg/ha post emergent.

2- Management as for 1 but 80 kg/ha of N applied post emergent.

3 – As for 2 plus 2 x 1 l/ha applications of 125 g/L Triadimefon fungicide applied at Z32 and Z39 for disease control.

*- Only included in 2005 and 2006.

Observations and comments:

- Addition of N and the use of fungicide did not significantly increase the yield of wheat and triticale in 2006.
- Addition of N and the use of fungicide significantly increased the yield of barley in 2006.
- In the longer term (Table 7) the application of N and the use of fungicide produced a yield rise in wheat, barley and triticale and produced an economic return.
- Canola and lupins yielded poorly in 2006 with negative gross margins becoming more negative as inputs were applied.
- Longer term canola has responded positively to N applications but not to fungicide.

Sponsors:

The Grains Research & Development Corporation, Mr C Cay, Mrs S Cay.