

Practice for Profit

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Aim

To examine the difference in profitability between low and high input cropping practices over an extended period of time.

Background

After ten years of running the Practice for Profit trial on different sites each year, this trial was set up in 2011 as a long term trial to examine the compounding effect of low and high inputs. By having a long term trial the results will begin reflecting the effects from both soil nutritional run down and increasing weed burden amongst other factors.

The trial is designed to compare the following two scenarios;

Low input: treatments based on a farmer producing grain at the lowest possible cost, regardless of seasonal conditions.

High input: treatments are applied to maximise yield potential.

Trial Details

Property	Wenballa Farm, east of Dalwallinu
Plot size & replication	8.8m x 12m x 3 replications
Soil type	Loamy clay
Soil pH	0-10cm: 6.7 10-20cm: 7.3 20-40cm: 8.0
EC	0.107 dS/m
Paddock rotation	2009 field peas, 2010 wheat, 2011 as per protocol (Table 1)
Variety	Mace
Seeding date	8/6/12
Sowing rate	As per protocol
Fertiliser	As per protocol
Herbicides	7/6/12: 1.5 L/ha Roundup, 2.5 L/ha Boxer Gold, 1 L/ha Lorsban
Growing Season Rainfall	132mm

Trial Layout

Table 1: 2012 Practice for Profit treatments.

Treatment	Variety	Input	Sowing rate	Gusto Gold banded	Urea TD 6WA-S	2011 Rotation and input level
1	Mace	Low	30 kg/ha	Nil	45 kg/ha	Wheat low
2	Mace	High	80 kg/ha	75 kg/ha	90 kg/ha	Wheat high
3	Mace	Low	30 kg/ha	Nil	45 kg/ha	Canola
4	Mace	High	80 kg/ha	75 kg/ha	90 kg/ha	Canola
5	Mace	Low	30 kg/ha	Nil	45 kg/ha	Vol Pasture
6	Mace	High	80 kg/ha	75 kg/ha	90 kg/ha	Vol Pasture
7	Mace	Low	30 kg/ha	Nil	45 kg/ha	Field Peas
8	Mace	High	80 kg/ha	75 kg/ha	90 kg/ha	Field Peas

Results

Table 2: Average 2012 Mace wheat yield and quality results of differing treatments sown at east of Dalwallinu. Different letters indicate a significant difference between treatments.

Treatment	Yield (t/ha)	Protein (%)	Moisture	Screenings (%)	Hectolitre Weight (g/hL)	Grade
Field Peas high	1.24 ^a	13.4 ^a	11.7	2.78% ^a	76.99	H1
Canola high	1.20 ^{ab}	13.7 ^a	11.7	3.24% ^{ab}	76.23	H1
Field Peas low	1.08 ^{ab}	12.4 ^a	11.7	3.16% ^{ab}	76.04	H2
Canola low	1.07 ^{ab}	12.4 ^a	11.8	2.70% ^a	76.33	H2
Wheat low	0.96 ^{ab}	10.8 ^b	11.6	4.74% ^b	74.94	APW2
Wheat high	0.88 ^{bc}	12.2 ^{ab}	11.4	7.03% ^c	72.79	AUH2
Vol Pasture low	0.65 ^c	12.4 ^a	11.7	3.87% ^{ab}	77.34	H2
Vol Pasture high	0.22 ^d	15.5 ^c	11.3	6.42% ^c	71.66	AUH2
<i>L.S.D.</i>	<i>0.28 t/ha</i>	<i>1.6%</i>		<i>1.58</i>		

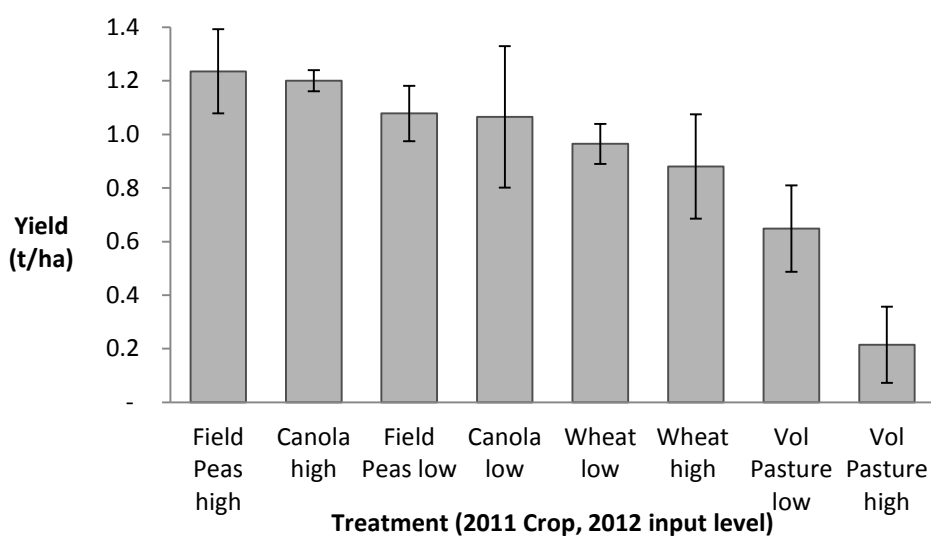


Figure 1: Yield results of Mace wheat grown at east of Dalwallinu 2012.

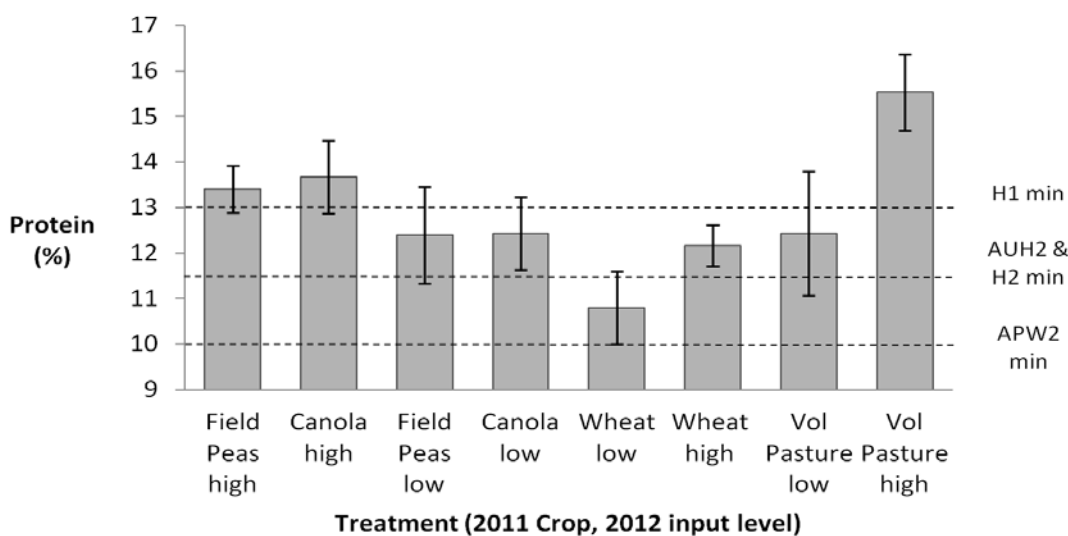


Figure 2: Average protein of Mace wheat grown at east of Dalwallinu 2012. Dotted lines represent minimum CBH receival standards for protein.

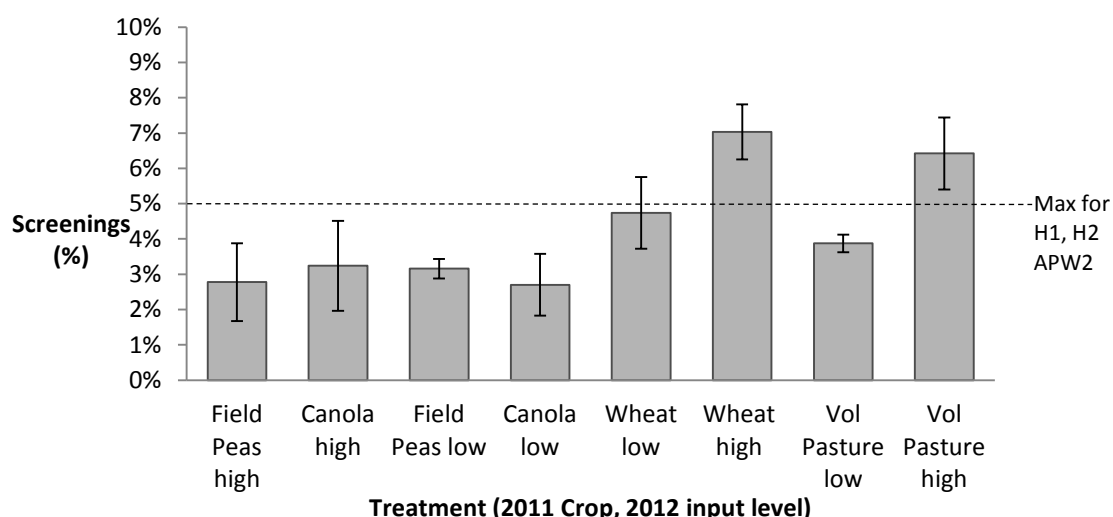


Figure 3: Average screenings of Mace wheat grown at east of Dalwallinu 2012. Dotted line represents maximum screenings in sample before downgraded to AUH2.

Economic Analysis

Table 3: Economic analysis of each treatment over the 2011 and 2012 seasons.

Treatment	Gross Margin (\$/ha)		
	2012	2011	2011/2012
Wheat low	204	448	652
Canola low	303	303	606
Canola high	138	392	530
Wheat high	66	440	507
Field Peas low	315	188	504
Field Peas high	144	222	366
Vol Pasture low	102	61	163
Vol Pasture high	-159	61	-98

Note: More detail of income and cost figures in Appendix 1.

The 2011 treatments only varied input levels on wheat treatments with canola, field peas and volunteer pasture plots treated as one input level.

Costs taken into account include fertiliser and herbicide costs and CBH receival and handling fees (\$37/t). The cost of wheat seed was also considered with the difference in input levels at 30 kg/ha and 80 kg/ha. The volunteer pasture plots, provide a value in sheep grazing; this was valued at \$74/winter grazed hectare, assumed from district practice.

Income was based on grade of sample tested at CBH site and price based on CBH cash price during December each year.

Comments

During the season there were visible differences in plots. This was especially noticeable in the short height of the high input wheat/volunteer pasture rotation in comparison to the 2011 wheat and canola rotations. This is reflected in poor yield results as shown in Table 2. Reason for significant variation was not determined, with no significant difference observed in soil sample results or weed burden.

Analysis shows over the 2011 and 2012 seasons wheat grown under a low input regime returned the highest gross margin; however, this is not significantly different from the canola low or canola high treatments (Table 3). This trial will continue to follow the rotation plan shown in Table 4 to determine the effect of high and low input on profitability in the long term.

Table 4: Practice for Profit trial, rotation plan.

Treatment	2011	2012	2013	2014	2015	Input Level across all years
1	Field Peas	Wheat	Wheat	Field Peas	Wheat	Low
2	Field Peas	Wheat	Wheat	Field Peas	Wheat	High
3	Wheat	Wheat	Wheat	Wheat	Wheat	Low
4	Wheat	Wheat	Wheat	Wheat	Wheat	High
5	Volunteer Pasture (Spraytopped)	Wheat	Wheat	Volunteer Pasture (Spraytopped)	Wheat	Low
6	Volunteer Pasture (Spraytopped)	Wheat	Wheat	Volunteer Pasture (Spraytopped)	Wheat	High
7	Canola	Wheat	Wheat	Canola	Wheat	Low
8	Canola	Wheat	Wheat	Canola	Wheat	High

Paper reviewed by: Noel Mills, Wenballa Farm

Contact

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Appendix 1

Table 5: Economic analysis over 2011 and 2012 seasons at the east of Dalwallinu site.

Treatment	Income (\$/ha)			Variable Costs (\$/ha)			Gross Margin (\$/ha)		
	2012	2011	2011 & 2012	2012	2011	2011 & 2012	2012	2011	2011 & 2012
Wheat low	328	699	1,027	124	251	375	204	448	652
Canola low	427	443	870	124	140	264	303	303	606
Canola high	371	539	910	233	147	380	138	392	530
Wheat high	299	750	1,049	233	310	543	66	440	507
Field Peas low	440	350	790	124	161	285	315	188	504
Field Peas high	377	388	765	233	166	399	144	222	366
Vol Pasture low	226	74	300	124	13	137	102	61	163
Vol Pasture high	73	74	147	232	13	245	-159	61	-98