

Practice for Profit Trial

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Australian Government



Key Messages

- Low input of continuous wheat is returning the highest gross margin in this scenario.

Aim

To examine the difference in profitability between low and high input cropping practices over an extended period of time and to determine the effect these practices are having on soil carbon.

Background

The Practice for Profit trial is for the fourth season in a row located on the Mills' property east of Dalwallinu and for the next four years we will 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 simulate a paddock with high yield potential matched with increased inputs to maximise yields and profitability.

However, in 2013 the set rotation was not able to be planted because a timing mismatch between rain and trial contractors resulting in the soil being too dry for the small trial seeding machinery to negotiate. The whole site was thus fallowed in 2013.

It is important to note that high and low inputs of this trial are considered on a seasonal basis and on the back of a chemical fallow all nutrient levels were high. On the trial to date the low input treatments have received maintenance levels of P and N. The levels of P, K and S will be monitored for the 2015 season and maintenance levels will be adjusted accordingly.

Trial Details

Property	Wenballa Farm, east Dalwallinu
Plot size & replication	8.8m x 12m x 3 replications
Soil type	Loamy clay
Soil pH (CaCl₂)	0-10cm: 5.5 10-20cm: 7.3 20-40cm: 8.0
EC (dS/m)	0.107
Sowing date	02/05/2014
Seeding rate	As per protocol
Paddock rotation	2010: wheat, 2011 and 2012: as per protocol (Table 1), 2013: fallow
Fertiliser	As per protocol
Herbicides/Insecticides	03/05/2014: 3 L/ha Weedmaster DST, 118 g/ha Sakura, 1 L/ha Trifluralin, 1 L/ha Chlorpyrifos 04/07/2014: 1 L/ha Velocity, 1% Hasten
Growing Season Rainfall	187mm

Trial Layout

Table 1: Practice for Profit trial, rotation plan.

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

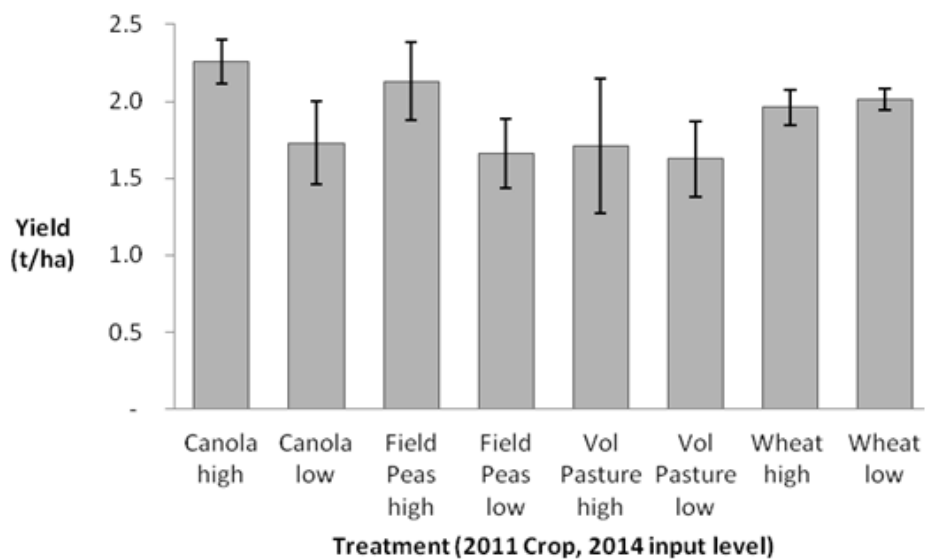
Table 2: 2014 Practice for Profit treatments.

Treatment	Variety	Input	Sowing rate (kg/ha)	Gusto Gold banded (kg/ha)	Urea TD 6WA-S (kg/ha)	2011 Rotation
1	Mace	Low	30	0	0	Wheat low
2	Mace	High	80	57	45	Wheat high
3	Mace	Low	30	0	0	Canola
4	Mace	High	80	57	45	Canola
5	Mace	Low	30	0	0	Vol Pasture
6	Mace	High	80	57	45	Vol Pasture
7	Mace	Low	30	0	0	Field Peas
8	Mace	High	80	57	45	Field Peas

Results

Table 3: Average yield, quality and grade of Mace wheat sown in 2014 at east Dalwallinu over the differing treatments.

Treatment	Yield (t/ha)	Moisture (%)	Hectolitre (g/hL)	Protein (%)	Grade
Canola High	2.26	11.80	76.76	13.53	H1
Field Peas High	2.13	11.77	77.59	14.10	H1
Wheat Low	2.01	11.40	79.29	12.23	H2
Wheat High	1.96	11.77	76.04	13.23	H1
Canola Low	1.73	11.47	77.07	12.8	H2
Vol Pasture High	1.71	11.83	73.29	15.37	H2
Field Peas Low	1.66	11.43	78.69	13.37	H1
Vol Pasture Low	1.63	11.37	79.48	12.97	H2

**Figure 1:** Yield results of Mace wheat grown at east Dalwallinu 2014 following a chemical fallow. Error bars indicate standard deviation.

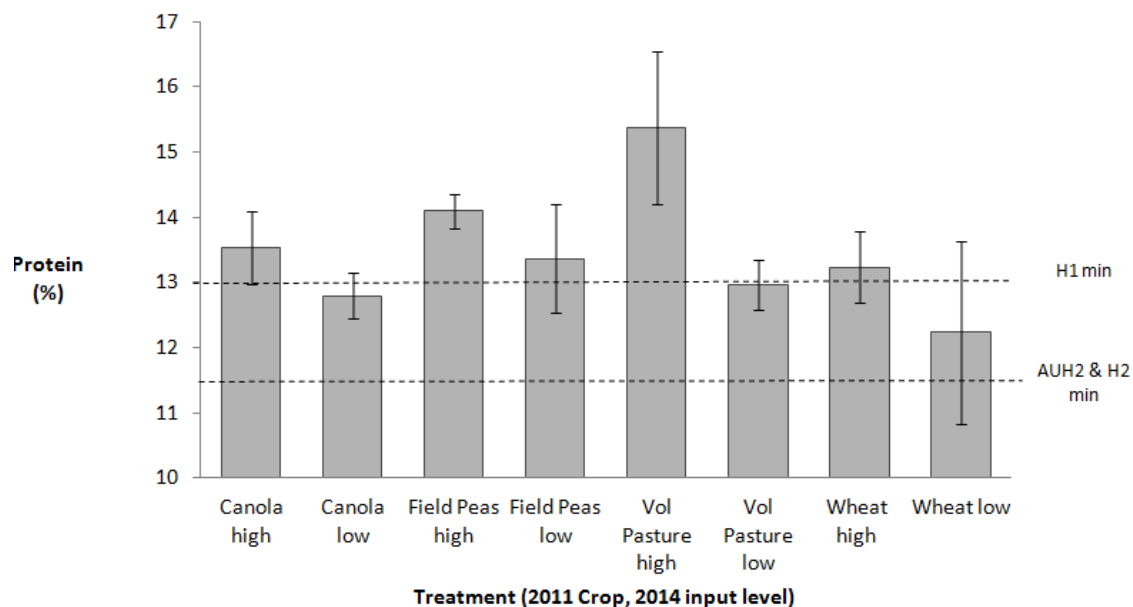


Figure 2: Average protein of Mace wheat grown at east Dalwallinu 2014 following a chemical fallow. Dotted lines represent minimum CBH receival standards for protein. Error bars indicate standard deviation.

Economic Analysis

Table 4: Economic analysis of each treatment over the 2011, 2012 and 2014 seasons.

Treatment	Gross Margin (\$/ha)			
	2014	2012	2011	Cumulative Total
Wheat low	446	204	448	1098
Canola high	445	138	392	975
Field Peas high	406	144	222	772
Canola low	356	303	303	962
Field Peas low	349	315	188	852
Wheat high	340	66	440	846
Vol Pasture low	337	102	61	500
Vol Pasture high	246	-159	61	148

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

The 2014 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 30kg/ha and 80kg/ha.

The volunteer pasture plots, while not creating profit via yield in 2011 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 AWB cash prices (H1 @ \$295/t, H2 @ \$290/t, APW1 @ \$284/t and AUH2 @ \$274/t) averaged from this year. Cost of application has not been included.

Comments

Analysis shows over the 2011, 2012 and 2014 seasons, wheat grown under a low input regime returned the highest gross margin and the volunteer pasture high treatment has consecutively returned the lowest gross margin (Table 4). This trial will continue to follow the rotation plan shown in Table 1 to determine the compounding effect of high and low input regimes.

Cumulative gross margins for the volunteer pasture treatments are still significantly impacted by 2012 results in which yields were below average. The reason for this significant variation was not determined, with no significant difference observed in soil sample results or weed burden.

Acknowledgements

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Appendix 1

Table 5: Economic analysis over three cropping seasons: 2011, 2012 and 2014 at east Dalwallinu.

Treatment	Income (\$/ha)			Variable Costs (\$/ha)				Gross Margin (\$/ha)			Cumulative Income
	2014	2012	2011	2014	2012	2011	2014	2012	2011		
Wheat low	584	328	699	137	124	251	446	204	448	1098	
Canola high	667	371	539	222	233	147	445	138	392	975	
Canola low	493	427	443	137	124	140	356	303	303	962	
Field Peas low	487	440	350	137	124	161	350	315	188	853	
Wheat high	562	299	750	222	233	310	340	66	440	846	
Field Peas high	629	377	388	222	233	166	407	144	222	773	
Vol Pasture low	474	226	74	137	124	13	337	102	61	500	
Vol Pasture high	469	73	74	222	232	13	247	-159	61	149	