



FLOOD IRRIGATED LUCERNE - Establishment

Farm Enterprise Budget Series - Murrumbidgee Valley/Murray Valley

Summer 2011/2012

1. GROSS MARGIN BUDGET: Based on small bale production

INCOME:

5.00 t/ha	@	\$350.00 /t (on farm)
3.00 t/ha	@	\$250.00 /t (on farm)
8.00 t/ha		\$312.50 /t (on farm)*

(4 cuts @ 2 t/ha/cut)

Standard Budget \$/ha	Your Budget \$/ha
\$1,750	
\$750	

A. TOTAL INCOME \$/ha:

\$2,500

VARIABLE COSTS:

See following page for detail

Cultivation.....	\$47
Sowing.....	\$165
Fertiliser.....	\$104
Herbicide.....	\$51
Fungicide.....	\$6
Insecticide.....	\$7
Irrigation.....	\$106
Levies.....	\$0
Cut, Rake and Bale.....	\$640
Cartage and Stack.....	\$384
B. TOTAL VARIABLE COSTS \$/ha:	\$1,510

C. GROSS MARGIN (A-B) \$/ha:

\$990

D. GROSS MARGIN \$/ML:

\$124

* weighted average price used

SENSITIVITY TABLES

2. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER HECTARE:

YIELD t/ha	On Farm Price				
	\$213 /t	\$263 /t	\$313 /t	\$363 /t	\$413 /t
6.00	\$60	\$360	\$660	\$960	\$1,260
7.00	\$151	\$501	\$851	\$1,201	\$1,551
8.00	\$241	\$641	\$990	\$1,441	\$1,841
9.00	\$332	\$782	\$1,232	\$1,682	\$2,132
10.00	\$423	\$923	\$1,423	\$1,923	\$2,423

3. EFFECT OF YIELD AND PRICE ON GROSS MARGIN PER MEGALITRE:

YIELD t/ha	On Farm Price				
	\$213 /t	\$263 /t	\$313 /t	\$363 /t	\$413 /t
6.00	\$7	\$45	\$82	\$120	\$157
7.00	\$19	\$63	\$106	\$150	\$194
8.00	\$30	\$80	\$124	\$180	\$230
9.00	\$42	\$98	\$154	\$210	\$267
10.00	\$53	\$115	\$178	\$240	\$303

The budget is ONLY A GUIDE and should be altered for movements in crop and input prices, changes in seasonal conditions and the farm characteristics. Estimated prices are GST - exclusive

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CALENDAR OF OPERATIONS:		Machinery			Inputs			Total
Operation	Month	hrs/ha	Cost \$/hour	Total \$/ha	Rate/ha	Cost	Total \$/ha	Cost \$/ha
Chisel plough	Dec	0.22	48.80	\$10.89				\$10.89
Off-set disc	Jan	0.35	42.85	\$14.88				\$14.88
Scarify	Feb/Mar	0.17	45.05	\$7.71				\$7.71
<i>Control grass weeds - boom spray e.g. trifluralin</i>	Apr	0.05	41.38	\$2.23	1.70 L/ha	\$6.18/L	\$10.51	\$12.74
Harrow	Apr	0.20	68.05	\$13.32			\$0.00	\$13.32
Sow	Apr/May	0.28	46.71	\$13.08	15kg/ha	\$10.00/kg	\$150.00	\$163.08
Seed inoculation		with above			15kg/ha	\$0.12/kg	\$1.80	\$1.80
Apply fungicide <i>e.g. metalaxyl (Apron®)</i>		with above			100 mL/100kg seed	\$0.38/mL	\$5.72	\$5.72
Apply single super phosphate fertiliser <i>e.g. Superfect®</i>		with above			300kg/ha	\$347.00/t	\$104.10	\$104.10
<i>Mite control boom spray - e.g. bifenthrin (Talstar® 100EC)</i>	May	0.05	41.38	\$2.07	0.10 L/ha	\$45.70/L	\$4.57	\$6.64
<i>Control broadleaf weeds - boom spray e.g. 2,4DB (Buttress®)</i>	May/Jun	0.05	41.38	\$2.07	2.10 L/ha	\$17.43/L	\$36.60	\$38.67
Irrigation	Sept-March				8.0ML/ha	\$13.27/ML	\$106.16	\$106.16
Cut, rake and bale		contract			320 bales	\$2.00/bale	\$640.00	\$640.00
Cartage + stacking		contract			320 bales	\$1.20/bale	\$384.00	\$384.00

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AGRONOMIC NOTES:	See DPI NSW publications: "Lucerne for Pasture and Fodder", "Weed Control in Lucerne and Pastures" & "Insect and Mite Control in Field crops".
Prices	<ul style="list-style-type: none"> - Prices are estimated and GST-exclusive. - Domestic hay prices fluctuate widely depending on supply and demand. - Prices are based on small 25 kg bales - price per bale basis (between \$8-\$15 /bale). Small bales often receive higher returns than larger bales on a \$ per tonne basis. Larger bales are cheaper to bale and transport. During drought years prices for hay rise significantly. - Higher prices are generally achieved during early winter. Adequate covered storage helps to achieve better prices.
Sowing time	<ul style="list-style-type: none"> - Sow lucerne in autumn (or early spring, if irrigation water is available) when temperatures are mild. - Avoid sowing in very cold or hot conditions.
Hay making	Hay can be made from spring to late autumn, depending upon the whether conditions.
Rotation	<ul style="list-style-type: none"> - Expected productive stand life of 3 - 4 years.
Layouts	<ul style="list-style-type: none"> - Slopes of 1: 750 to 1:000 are preferred to ensure good drainage for flood irrigation. Avoid waterlogging.
Varieties	<ul style="list-style-type: none"> - Use adapted, root-rot resistant varieties (Semi-dormant to highly winter active).
Inoculation	<ul style="list-style-type: none"> - Inoculate with correct strain of rhizobia (AL) to ensure good nodulation for nitrogen fixation. - Seedlings are tiny, so minimise weed competition to ensure good establishment.
Weed Control	<ul style="list-style-type: none"> - Pre-emergent herbicide controls grasses and wireweed during establishment. - Post-emergent herbicide applied for broadleaf weed control (2,4-DB) is used in this budget, but other options are available.
Disease Control	<ul style="list-style-type: none"> - Varieties with root rot resistance are crucial for flood irrigation. - Treat seed with a fungicide to prevent damping off e.g. Apron®)
Insect Control	<ul style="list-style-type: none"> - Seedlings are very susceptible to insect damage, particularly earth mites and aphids. - Regularly monitor establishing crops and take necessary remedial action. - Consider seed treatment or preventative bare earth sprays in high risk situations. - Talstar is used for mite control but other insecticides are also available.
Production	<ul style="list-style-type: none"> - Assume four cuts are made during the first season. Assume that 1 tonne = 40 small square bales. - Assume 5 t is high quality and 3 t is downgraded by weather, weeds, etc.
Fertiliser	<ul style="list-style-type: none"> -If soil pH < 5.2 (CaCl₂), lime should be incorporated 3 months before sowing. This cost is not included in the budget. - Phosphorus fertiliser banded beneath the seed at sowing helps establishment and early growth. - Molybdenised super at sowing aids nodulation. Apply gypsum to sodic or crusting soils to improve soil permeability, reduce crusting and improve establishment.
Irrigation	<ul style="list-style-type: none"> - The MIA variable water costs are used in the budget. The budget is based on the assumption of 50% water allocation. For water costs in other irrigation districts or river pumpers, check Murrumbidgee irrigation web site. For water costs in the CIA, please go to the web site for the appropriate irrigation authority.
Risk	<ul style="list-style-type: none"> - The production of good quality lucerne hay involves significant risk (mainly weather) which potential growers should take into account. Thus, some of hay is sold at a lower price.
Machinery	<ul style="list-style-type: none"> - Machinery costs include variable costs only for the tractor and implements. Two tractors: of 57 kW (77 HP) PTO and 66 kW (90 HP) engine; and of 141 kW (190 HP) PTO and 148 kW (225 HP) engine are assumed.
Economics	- Cost of establishment should be spread over life of the stand

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