



IRRIGATED LUCERNE - Establishment

Farm Enterprise Budget Series - Murrumbidgee Valley/Murray Valley
Summer 2009/2010

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.....	\$116
Fertiliser.....	\$111
Herbicide.....	\$40
Fungicide.....	\$3
Insecticide.....	\$4
Irrigation.....	\$127
Levies.....	\$0
Cut, Rake and Bale.....	\$640
Cartage and Stack.....	\$384
B. TOTAL VARIABLE COSTS \$/ha:	\$1,473

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

\$1,027

D. GROSS MARGIN \$/ML:

\$128

* 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	\$96	\$396	\$696	\$996	\$1,296
7.00	\$187	\$537	\$887	\$1,237	\$1,587
8.00	\$278	\$678	\$1,027	\$1,478	\$1,878
9.00	\$369	\$819	\$1,269	\$1,719	\$2,169
10.00	\$460	\$960	\$1,460	\$1,960	\$2,460

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	\$12	\$50	\$87	\$125	\$162
7.00	\$23	\$67	\$111	\$155	\$198
8.00	\$35	\$85	\$128	\$185	\$235
9.00	\$46	\$102	\$159	\$215	\$271
10.00	\$57	\$120	\$182	\$245	\$307

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CALENDAR OF OPERATIONS:		Machinery			Inputs			Total
Operation	Month	Cost		Total	Rate/ha	Cost		Total
		hrs/ha	\$/hour	\$/ha		Cost	Total	
						\$/ha		\$/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
Control grass weeds - boom spray <i>e.g. trifluralin</i>	Apr	0.05	41.38	\$2.23	1.70 L/ha	\$8.90/L	\$15.13	\$17.36
Harrow	Apr	0.20	68.05	\$13.32			\$0.00	\$13.32
Sow	Apr/May	0.28	46.71	\$13.08	12kg/ha	\$8.50/kg	\$102.00	\$115.08
Seed inoculation		with above			12kg/ha	\$0.10/kg	\$1.20	\$1.20
Apply fungicide <i>e.g. metalaxyl</i> <i>(Apron®)</i>		with above			100 mL/100kg seed	\$0.28/mL	\$3.37	\$3.37
Apply single super phosphate fertiliser <i>e.g. Superfect®</i>		with above			300kg/ha	\$371.00/t	\$111.30	\$111.30
Mite control boom spray - <i>e.g. bifenthrin (Talstar® 100EC)</i>	May	0.05	41.38	\$2.07	0.10 L/ha	\$21.00/L	\$2.10	\$4.17
Control broadleaf weeds - boom spray <i>e.g. 2,4DB (Buttress®)</i>	May/June	0.05	41.38	\$2.07	2.10 L/ha	\$9.75/L	\$20.48	\$22.54
Irrigation	Sept-March				8.0ML/ha	\$15.90/ML	\$127.20	\$127.20
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

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

AGRONOMIC NOTES:	- Good establishment is key to manage stand well for best production, quality and persistence
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 and these prices reflect the current drought. - 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	<ul style="list-style-type: none"> - Hay can be made from spring to late autumn, depending upon the weather 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 1:1000 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.
Weed Control	<ul style="list-style-type: none"> - Seedlings are tiny, so minimise weed competition to ensure good establishment. - 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.
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 25% of water allocations
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	<ul style="list-style-type: none"> - Cost of establishment should be spread over life of the stand.
More information	<ul style="list-style-type: none"> See II NSW publications: "Lucerne for Pasture and Fodder", "Weed Control in Lucerne and Pastures" & "Insect and Mite Control in Field crops".

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