



**LUCERNE: Establishment (Flood Irrigated - Border Check)**

Irrigated Winter - 2012

Murray Valley &  
Murrumbidgee Valley

**1. GROSS MARGIN BUDGET:**

**INCOME:**

5.0 t/ha @	\$350 /tonne ON FARM
3.0 t/ha @	\$200 /tonne ON FARM
<b>8.0 t/ha @</b>	<b>\$294 /tonne ON FARM *</b>
(4 cuts @ 2 t/ha/cut)	* Weighted average price

Standard Budget \$/ha	Your Budget \$/ha
\$1,750	
\$600	

**A. TOTAL INCOME \$/ha:**

<b>\$2,350</b>
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**VARIABLE COSTS:**

See following page for detail

Cultivation.....	\$75
Sowing.....	\$115
Fertiliser.....	\$114
Fungicide.....	\$6
Herbicide.....	\$40
Insecticide.....	\$15
Mow, rake and bale.....	\$640
Cartage & stacking.....	\$384
Irrigation.....	\$106
<b>B. TOTAL VARIABLE COSTS \$/ha:</b>	<b>\$1,496</b>

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

<b>\$854</b>
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**D. GROSS MARGIN \$/ML:**

<b>\$107</b>
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**SENSITIVITY TABLES**

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

YIELD tonnes/ha	ON FARM PRICE (\$/tonne)					Gross Margin (\$/ha)
	\$194 /t	\$244 /t	<b>\$294 /t</b>	\$394 /t	\$494 /t	
5.00	-\$335	-\$85	\$165	\$665	\$1165	
6.00	-\$205	\$95	\$395	\$995	\$1595	
7.00	-\$76	\$274	\$624	\$1324	\$2024	
<b>8.00</b>	\$54	\$454	<b>\$854</b>	\$1654	\$2454	←
9.00	\$184	\$634	\$1084	\$1984	\$2884	
10.00	\$314	\$814	\$1314	\$2314	\$3314	
11.00	\$443	\$993	\$1543	\$2643	\$3743	

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

YIELD tonnes/ha	ON FARM PRICE (\$/tonne)					Gross Margin (\$/ML)
	\$194 /t	\$244 /t	<b>\$294 /t</b>	\$394 /t	\$494 /t	
5.00	-\$42	-\$11	\$21	\$83	\$146	
6.00	-\$26	\$12	\$49	\$124	\$199	
7.00	-\$9	\$34	\$78	\$166	\$253	
<b>8.00</b>	\$7	\$57	<b>\$107</b>	\$207	\$307	←
9.00	\$23	\$79	\$135	\$248	\$360	
10.00	\$39	\$102	\$164	\$289	\$414	
11.00	\$55	\$124	\$193	\$330	\$468	

# LUCERNE: Establishment (Flood Irrigated - Border Check)

## Murray Valley & Murrumbidgee Valley

Irrigated Winter - 2012

CALENDAR OF OPERATIONS:		Machinery			Inputs			Total Cost
Operation	Month	hrs/ha	Cost \$/hour	Total \$/ha	Rate/ha	Cost \$	Total \$/ha	\$/ha
Plough	Dec	0.22	\$48.80	\$10.89				<b>\$10.89</b>
Off-set disc	Jan	0.35	\$42.85	\$14.88				<b>\$14.88</b>
Scarify	Feb/Mar	0.17	\$45.05	\$7.71				<b>\$7.71</b>
Pre-emergent weed spray (eg. <i>trifluralin</i> )	Apr	contract		\$10.00	1.70 L/ha	\$8.50/L	\$14.45	<b>\$24.45</b>
Harrow (x 2)		0.17	\$62.38	\$20.97				<b>\$41.94</b>
Sow	Apr/May	0.17	\$62.38	\$10.48	12kg/ha	\$8.70/kg	\$104.40	<b>\$114.88</b>
Seed inoculation		with above			12kg/ha	\$0.04/kg	\$0.48	<b>\$0.48</b>
Fungicide seed treatment (eg. Metalaxyl)		with above			150 mL/100kg seed	\$0.32/mL	\$5.80	<b>\$5.80</b>
Apply single super phosphate (eg. <i>Superfect</i> ®)		with above			300kg/ha	\$0.380/kg	\$114.00	<b>\$114.00</b>
Insect & mite spray (eg. <i>Boom spray bifenthrin</i> )	May	contract		\$10.00	0.10 L/ha	\$46.00/L	\$4.60	<b>\$14.60</b>
Broadleaf weed spray (eg. <i>2,4-DB</i> )	May/Jun	contract		\$10.00	1.00 L/ha	\$5.97/kg	\$5.97	<b>\$15.97</b>
Cut, rake and bale	Oct-Apr	contract	320.00	bales/ha	2.00	\$/bale		<b>\$640.00</b>
Cartage & stacking	Oct-Apr	contract	320.00	bales/ha	1.20	\$/bale		<b>\$384.00</b>
Irrigation*	Sep - Mar				8.0ML/ha	\$13.27/ML	\$106.16	<b>\$106.16</b>

<b>AGRONOMIC NOTES:</b>	See the NSW DPI publications: " <i>Lucerne for pasture and fodder</i> ", " <i>Weed control in pastures and lucerne</i> " and " <i>Insect and mite control in field crops</i> "
<b>Prices:</b>	<ul style="list-style-type: none"> <li>- Domestic hay prices fluctuate widely depending on supply and demand.</li> <li>- Prices are estimated and GST-exclusive.</li> <li>- During drought years prices may range from \$300-600/ t. Prices used here reflect the current drought.</li> <li>- Higher prices are generally achieved during early winter. Having adequate storage helps to achieve better season prices.</li> <li>- Prices based on small (25kg) bales - price per bale basis (between \$6-10 /bale). Small bales often receive higher returns per tonne than larger bales. Larger bales are cheaper to bale and transport.</li> </ul>
<b>Rotation:</b>	<ul style="list-style-type: none"> <li>- Expected stand life 3 - 4 years for hay production. Lucerne fixes nitrogen for use by subsequent crops.</li> <li>- Rotate lucerne with cereals to avoid insect &amp; disease problems.</li> </ul>
<b>Layouts:</b>	<ul style="list-style-type: none"> <li>- Even grades with slopes of 1:750 - 1:1000 are preferred for flood irrigation to allow good drainage and avoid waterlogging.</li> </ul>
<b>Varieties:</b>	<ul style="list-style-type: none"> <li>- Use adapted, root-rot resistant varieties (semi-dormant to highly winter active).</li> </ul>
<b>Inoculation:</b>	<ul style="list-style-type: none"> <li>- Inoculate lucerne with correct strain of rhizobia (AL) to ensure good nodulation for nitrogen fixation (pretreated seed is available but increases cost).</li> </ul>
<b>Weed Control:</b>	<ul style="list-style-type: none"> <li>- Minimise weed competition.</li> <li>- Pre-emergent herbicide controls grasses and wireweed during establishment.</li> <li>- Post-emergent herbicide applied for broadleaf weed control (2,4-DB is used in this budget but other options are available.)</li> </ul>
<b>Disease Control:</b>	<ul style="list-style-type: none"> <li>- Root rot resistant varieties are crucial for flood irrigation.</li> <li>- Treat seed with a fungicide to prevent damping off disease.</li> </ul>
<b>Insect Control:</b>	<ul style="list-style-type: none"> <li>- Seedlings are very susceptible to insects, particularly earth mites (RLEM, BOM) and aphids.</li> <li>- Regularly monitor establishing crops and take necessary remedial action.</li> <li>- Consider seed treatment or preventative bare earth sprays in high risk situations.</li> </ul>
<b>Sowing time:</b>	<ul style="list-style-type: none"> <li>- Sow lucerne in autumn (or early spring, if irrigation water is available) when temperatures are mild.</li> <li>- Avoid sowing in very cold or hot conditions.</li> </ul>
<b>Production:</b>	<ul style="list-style-type: none"> <li>- Assume four cuts are made during the first season. Assume that 1 tonne = 40 small square 25kg bales.</li> <li>- Assume 5 t is high quality and 3 t is downgraded by weather, weeds, etc.</li> </ul>
<b>Harvest Management:</b>	<ul style="list-style-type: none"> <li>- Do not cut until plants are 20cm tall and allow plants to flower once during the first year to aid persistence.</li> </ul>
<b>Fertiliser:</b>	<ul style="list-style-type: none"> <li>- Lime should be incorporated at least 3 months before sowing, if soil is acid (pH &lt; 5.2 (CaCl<sub>2</sub>)). This cost is not included in the budget.</li> <li>- Phosphorus fertiliser banded beneath the seed at sowing helps establishment and early growth.</li> <li>- Molybdenum super at sowing aids nodulation. Apply gypsum to sodic or crusting soils to improve soil permeability, reduce crusting and improve establishment.</li> </ul>
<b>Irrigation:</b>	<ul style="list-style-type: none"> <li>- <b>Irrigation cost includes the variable cost only.</b></li> <li>- <b>Water costs used in the MIA budgets are based on 2011-12 prices.</b></li> <li>- <b>For water costs in other areas, refer to the water prices section.</b></li> </ul>
<b>Risk:</b>	<ul style="list-style-type: none"> <li>- The production of high quality lucerne hay involves significant risk due to weather and price fluctuations which potential growers should take into account. Thus, some of hay is at a lower price.</li> </ul>
<b>Machinery:</b>	<ul style="list-style-type: none"> <li>- Machinery costs include variable costs only for the tractor and implements. Two tractors: of 57 kW (76 HP) PTO and 63 kW (86 HP) engine; and of 130 kW (175 HP) PTO and 146 kW (196 HP) engine are assumed.</li> </ul>
<b>Economics:</b>	<ul style="list-style-type: none"> <li>- These gross margins are only a guide. They do not include overhead costs or GST.</li> <li>- Input and crop prices are correct at the time of writing (April 2012). Market uncertainty makes estimation of future pricing impractical.</li> <li>- Cost of establishment should be spread over life of the stand</li> </ul>