



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 |
| 8.0 t/ha @ | \$294 /tonne ON FARM * |

(4 cuts @ 2 t/ha/cut) * Weighted average price

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

A. TOTAL INCOME \$/ha:

| |
|----------------|
| \$2,350 |
|----------------|

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. TOTAL VARIABLE COSTS \$/ha:

| |
|----------------|
| \$1,496 |
|----------------|

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

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|--------------|
| \$854 |
|--------------|

D. GROSS MARGIN \$/ML:

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| \$107 |
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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 | \$294 /t | \$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 | |
| 8.00 | \$54 | \$454 | \$854 | \$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 | \$294 /t | \$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 | |
| 8.00 | \$7 | \$57 | \$107 | \$207 | \$307 | ← |
| 9.00 | \$23 | \$79 | \$135 | \$248 | \$360 | |
| 10.00 | \$39 | \$102 | \$164 | \$289 | \$414 | |
| 11.00 | \$55 | \$124 | \$193 | \$330 | \$468 | |

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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 | Cost \$/ha |
| 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 |
| Pre-emergent weed spray (eg. <i>trifluralin</i>) | Apr | contract | | \$10.00 | 1.70 L/ha | \$8.50/L | \$14.45 | \$24.45 |
| Harrow (x 2) | | 0.17 | \$62.38 | \$20.97 | | | | \$41.94 |
| Sow | Apr/May | 0.17 | \$62.38 | \$10.48 | 12kg/ha | \$8.70/kg | \$104.40 | \$114.88 |
| Seed inoculation | | with above | | | 12kg/ha | \$0.04/kg | \$0.48 | \$0.48 |
| Fungicide seed treatment (eg. Metalaxyl) | | with above | | | 150 mL/100kg seed | \$0.32/mL | \$5.80 | \$5.80 |
| Apply single super phosphate (eg. <i>Superfect</i> ®) | | with above | | | 300kg/ha | \$0.380/kg | \$114.00 | \$114.00 |
| Insect & mite spray (eg. <i>Boom spray bifenthrin</i>) | May | contract | | \$10.00 | 0.10 L/ha | \$46.00/L | \$4.60 | \$14.60 |
| Broadleaf weed spray (eg. <i>2,4-DB</i>) | May/Jun | contract | | \$10.00 | 1.00 L/ha | \$5.97/kg | \$5.97 | \$15.97 |
| Cut, rake and bale | Oct-Apr | contract | 320.00 | bales/ha | 2.00 | \$/bale | | \$640.00 |
| Cartage & stacking | Oct-Apr | contract | 320.00 | bales/ha | 1.20 | \$/bale | | \$384.00 |
| Irrigation* | Sep - Mar | | | | 8.0ML/ha | \$13.27/ML | \$106.16 | \$106.16 |

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|----------------------------|--|
| AGRONOMIC NOTES: | 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> " |
| Prices: | <ul style="list-style-type: none"> - Domestic hay prices fluctuate widely depending on supply and demand. - Prices are estimated and GST-exclusive. - During drought years prices may range from \$300-600/ t. Prices used here reflect the current drought. - Higher prices are generally achieved during early winter. Having adequate storage helps to achieve better season prices. - 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. |
| Rotation: | <ul style="list-style-type: none"> - Expected stand life 3 - 4 years for hay production. Lucerne fixes nitrogen for use by subsequent crops. - Rotate lucerne with cereals to avoid insect & disease problems. |
| Layouts: | <ul style="list-style-type: none"> - Even grades with slopes of 1:750 - 1:1000 are preferred for flood irrigation to allow good drainage and 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 lucerne with correct strain of rhizobia (AL) to ensure good nodulation for nitrogen fixation (pretreated seed is available but increases cost). |
| Weed Control: | <ul style="list-style-type: none"> - Minimise weed competition. - 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"> - Root rot resistant varieties are crucial for flood irrigation. - Treat seed with a fungicide to prevent damping off disease. |
| Insect Control: | <ul style="list-style-type: none"> - Seedlings are very susceptible to insects, particularly earth mites (RLEM, BOM) and aphids. - Regularly monitor establishing crops and take necessary remedial action. - Consider seed treatment or preventative bare earth sprays in high risk situations. |
| 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. |
| Production: | <ul style="list-style-type: none"> - Assume four cuts are made during the first season. Assume that 1 tonne = 40 small square 25kg bales. - Assume 5 t is high quality and 3 t is downgraded by weather, weeds, etc. |
| Harvest Management: | <ul style="list-style-type: none"> - Do not cut until plants are 20cm tall and allow plants to flower once during the first year to aid persistence. |
| Fertiliser: | <ul style="list-style-type: none"> - Lime should be incorporated at least 3 months before sowing, if soil is acid (pH < 5.2 (CaCl₂)). This cost is not included in the budget. - Phosphorus fertiliser banded beneath the seed at sowing helps establishment and early growth. - Molybdenum 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"> - Irrigation cost includes the variable cost only. - Water costs used in the MIA budgets are based on 2011-12 prices. - For water costs in other areas, refer to the water prices section. |
| Risk: | <ul style="list-style-type: none"> - 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. |
| Machinery: | <ul style="list-style-type: none"> - 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. |
| Economics: | <ul style="list-style-type: none"> - These gross margins are only a guide. They do not include overhead costs or GST. - Input and crop prices are correct at the time of writing (April 2012). Market uncertainty makes estimation of future pricing impractical. - Cost of establishment should be spread over life of the stand |