# Crop Gross Margin Budgets for the Katherine-Daly Region 1999-00

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## Introduction and Some Important Notes

The standardised gross margin budgets for the Katherine/Daly region are presented in this Technical Bulletin. They are a guide to the costs and returns that can be expected if specific conditions (relating to climate, prices, management, etc.) prevail. If these conditions are not met, then the gross margin estimates can be wide off the mark. That does not mean we are wasting our time, though. For instance, the budgets can be looked at more closely to see how variations in yields and prices affect cropping returns. They can also be used as a basis for assessing the risk associated with planting a certain crop measured in dollar terms. *In any case, farmers are encouraged to prepare gross margin estimates based on their own situation, experience and expectations since these are likely to be different from those assumed in the standardised budgets.*

Standardised gross margin (GM) budgets provide a benchmark for comparing farm specific gross margins (eg. you can compare your GM for sorghum against the `standardised GM' budget for sorghum) and are useful for comparing the profitability of different crops (eg. maize vs sorghum).

GM analysis is a simplified budgeting technique since it ignores overhead costs. Overhead costs can be safely ignored if comparing activities of a similar nature (eg. no-till maize vs no-till sorghum) that use existing farm plant and equipment. If new capital equipment is required (eg. installation of irrigation equipment, purchase of minimum tillage equipment, purchase of livestock) or if activities are not of a similar nature (eg. fattening steers vs no-till maize), then more complicated budgeting is required. Contact the ORD for further information.

Once the techniques of farm budgeting have been mastered, they become second nature in evaluating the uncertain outcomes that a farmer faces. Budgeting, after all, is merely attaching dollar values to those decisions that need to be made during the production process. Very few people in the farming game today are in a position where they do not need to keep a close eye on their finances.

**Some Comments on the Standardised Budgets**

(a) Not all machinery costs are included in the gross margins. Only repairs and maintenance costs to machinery plus fuel and oil costs are included. All other costs, including depreciation, interest, provision of shelter, operators labour and insurance costs are treated as overhead costs. The ability to cover this latter group of costs is usually measured by preparing a whole farm budget.

The fuel, oil, and repair and maintenance bill was calculated as an average of 10,000 rated hours of use from tractors purchased new and 1,200 - 2,400 rated hours use from new implements. This is merely a simple accounting technique. Individual growers should have a better idea of their own fuel, oil, repairs and maintenance costs. Actual machinery running costs for a particular farm may be much higher if old, worn-out equipment is used.

Fuel cost has been budgeted at 43¢/L. This is net of the NT government tax rebate and the customs and excise rebate for on-farm use. Labour costs are not included.

(b) Seeding rates will vary, depending on the weight of seed, germination percentage and individual's sowing practices.

(c) Fertiliser rates should be varied with the nutrient status of the soil and particular crop requirements. Ask your district agronomist if you need advice on this matter.

(d) Herbicide and pesticide application rates vary with climate, incidence of insects, etc. It is illegal to use any herbicide or pesticide that is not registered for use in the NT and to use registered chemicals contrary to their label specifications. Contact the DPIF for further information if required.

(e) The NT Irrigation, Grain and Fodder Industries Association, Incorporated operates a commercial grain handling and storage facility at Katherine.

(f) Trade names are used in this publication solely for the purpose of providing specific information. Mention of a registered trade name does not constitute a guarantee or warranty of the product by ORD, nor does it endorse the product over brand names not mentioned. Trade names have been included because producers seem to identify more readily with these than with chemical names.

(g) Costs and Returns may not add up exactly due to rounding of numbers.

## What is a Gross Margin?

A **gross margin** is the difference between **gross income** and total **variable costs** for a **farm activity**.

The **total gross margin** for a farm is the sum of all individual activity gross margins.

**Gross Income** can be measured by total receipts from the sale of produce plus the value of any retained output.

**Variable Costs** (also known as running costs): As the name implies, these costs vary with the size of farm activities. For example, if the area sown to sorghum is increased from 200 hectares to 400 hectares then roughly twice the amount of seed and fertiliser will be required. Other variable costs include fuel, oil and repair and maintenance to machinery; casual labour costs; weed and pest control; harvesting and marketing costs. Variable costs are distinct from overhead costs.

**Farm Activity** refers to the particular method employed in producing a commodity. For example, zero tillage maize and conventional tillage maize are two different farm activities. Both, however, are described by the more general expression of a maize **enterprise**.

**Overhead Costs** (or fixed costs): These costs are difficult to avoid each year and are unlikely to vary with changes in the levels of different farm activities, unless some capital expenditure is required for these changes to occur. Overhead costs include the wages of permanent workers, living expenses of the family, finance costs, insurance, telephone, replacement of buildings and

machines, business expenses, rates and land taxes. Overhead costs plus variable costs represent total costs.

The relationship between the total gross margin and farm overhead costs provide a useful guide when computed on a per hectare basis. The average gross margin per hectare should be greater than the average overheads per hectare for the farm to make money.

Gross margins alone do not provide a basis for farm planning. Crop rotations, demands on farm labour, finance, risk and other constraints need to be considered in the context of farm objectives. Gross margins are simply the most commonly used, first-step, budgeting techniques.

## GROSS MARGIN BUDGET

### Zero-Till Sorghum

ENTERPRISE NAME: Zero-Till Sorghum REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| **INCOME** | | $/ha | Your Estimate |
|---|---|---|---|
| Yield | 2.5 t/ha @ $180/tonne | 450 | |
| Other Income | | | |
| - Fertiliser Subsidy | 275 kg @ $55/tonne | 15 | |
| - Agistment | 17 weeks @ $2.00/hd/week | 34 | |
| **A. TOTAL INCOME** | | **499** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| Control Grazing | | | |
| 1 Knock Down Spray (RoundupCT) | 2 L/ha @ $6.75/L | 14 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Sowing | | | |
| Seed | 8 kg/ha @ $5.20/kg | 42 | |
| Sowing Operation | 4.2 ha/h @ $16.65/h | 4 | |
| Fertilisers | | | |
| NPKS (19-13-0-9) | 150 kg/ha @ $592/tonne | 89 | |
| Urea | 75 kg/ha @ $425/tonne | 32 | |
| Muriate of Potash (MOP) | 50 kg/ha @ $475/tonne | 24 | |
| 2 applications (pre-planting) | 7.2 ha/h @ $16.65/h | 5 | |
| 1 application (post-planting) | 7.2 ha/h @ $16.65/h | 2 | |
| Weed Control | | | |
| Atrazine | 3 kg/ha @ $6.90/L | 14 | |
| 1 application (post-planting) | 9.36 ha/h @ $17.53/h | 2 | |
| Harvesting | | | |
| Heading | 3.15 ha/h @ $82.07/h | 26 | |
| Marketing | | | |
| Freight to Enduser | @ $30/tonn | 75 | |
| **B. TOTAL VARIABLE COSTS** | | **329** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **170** | |

**NOTES:**
1. Sorghum stubble may be utilised for agistment in some seasons.

**Sensitivity of Sorghum Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | | |
|---|---|---|---|---|---|---|
| ($/t) | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 |
| 150 | -25 | 35 | 95 | 155 | 215 | 275 |
| 180 | 20 | 95 | 170 | 245 | 320 | 395 |
| 200 | 50 | 135 | 220 | 305 | 390 | 475 |
| 220 | 80 | 175 | 270 | 365 | 460 | 555 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at a price of $180/tonne = 1.37 t/ha
Breakeven Price at a yield of 2.50 t/ha = $111.96/tonne

## GROSS MARGIN BUDGET

### Zero-Till Maize

ENTERPRISE NAME: Zero-Till Maize REGION: Douglas Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| | | $/ha | Your Estimate |
|---|---|---|---|
| **INCOME** | | | |
| Yield | 3 t/ha @ $230/tonne | 690 | |
| Other Income | | | |
| - Fertiliser Subsidy | 300 kg @ $55/tonne | 17 | |
| **A. TOTAL INCOME** | | **707** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| Control Grazing | | | |
| 1 Knock Down Spray (RoundupCT) | 2 L/ha @ $6.75/L | 13.5 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Sowing | | | |
| Seed (Hycorn 90) | 17 kg/ha @ $6.20/kg | 105 | |
| Sowing Operation | 4.2 ha/h @ $16.65/h | 4 | |
| Fertilisers | | | |
| NPKS (19-13-0-9) | 150 kg/ha @ $592/tonne | 89 | |
| Urea | 150 kg/ha @ $425/tonne | 64 | |
| 2 applications (pre-planting and post-planting) | 7.2 ha/h @ $16.65/h | 5 | |
| Weed Control | | | |
| Atrazine | 2 kg/ha @ $6.90/L | 14 | |
| Dual | 2 L/ha @ $23.00/L | 46 | |
| 1 application (post-planting) | 9.36 ha/h @ $17.53/h | 2 | |
| Harvesting | | | |
| Heading (own harvester) | 2.10 ha/h @ $82.07/h | 39 | |
| Marketing | | | |
| Freight to Enduser | @ $30/tonne | 90 | |
| **B. TOTAL VARIABLE COSTS** | | **473** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **234** | |

**Sensitivity of Maize Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | | | |
|---|---|---|---|---|---|---|---|
| ($/t) | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 |
| 180 | -216 | -141 | -66 | 9 | 84 | 159 | 234 |
| 200 | -196 | -111 | -26 | 59 | 144 | 229 | 314 |
| 220 | -176 | -81 | 14 | 109 | 204 | 299 | 394 |
| 250 | -146 | -36 | 74 | 184 | 294 | 404 | 514 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at a price of $230/tonne = 1.83 t/ha
Breakeven Price at a yield of 3 t/ha = $152.05/tonne

## GROSS MARGIN BUDGET

### Irrigated Maize

ENTERPRISE NAME: Irrigated Maize REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 Hectare DATE: May 2000

| | | $/ha | Your Estimate |
|---|---|---|---|
| **INCOME** | | | |
| Yield | 8.5 t/ha @ $230/tonne | 1955 | |
| Other Income | | | |
| -Fertiliser Subsidy | 970 kg @ $55/tonne | 53 | |
| **A. TOTAL INCOME** | | **2008** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| 1 Disc Ploughing | 5.04 ha/h @ $29.19/h | 6 | |
| 1 Chisel Ploughing | 5.04 ha/h @ $29.19/h | 6 | |
| 1 Scarify | @ $5.00/ha | 5 | |
| Sowing | | | |
| Seed (hycorn 90) | 24 kg/ha @ $6.20/kg | 149 | |
| Sowing Operation | 4.20 ha/h @ $16.65/h | 4 | |
| Fertilisers | | | |
| DAP/SOA | 250 kg/ha @ $612/tonne | 153 | |
| MOP | 250 kg/ha @ $475/tonne | 119 | |
| Urea | 350 kg/ha @ $425/tonne | 149 | |
| Zinc hepta-hydrate | 70 kg/ha @ $840/tonne | 59 | |
| DAP + TE | 50 kg/ha @ $750/tonne | 38 | |
| 3 applications (pre-planting) | 7.20 ha/h @ $16.65/h | 7 | |
| Weed Control | | | |
| Primextra | 5 L/ha @ $9.95/L | 50 | |
| 1 application (post-planting) | 9.36 ha/h @ $17.53/h | 2 | |
| Irrigation | 6.5 ML/ha @ $ 55.00/ML | 358 | |
| Insect Control | | | |
| Lavin | 2.00 L/ha @ $24.00/L | 48 | |
| Aerial Spraying | 15/ha | 15 | |
| Harvesting | | | |
| Heading (own harvester) | 2.10 ha/h @ $82.07/h | 39 | |
| Marketing | | | |
| Freight to Enduser | @ $30/tonne | 255 | |
| **B. TOTAL VARIABLE COSTS** | | **1459** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **549** | |

**Sensitivity of Maize Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | | | |
|---|---|---|---|---|---|---|---|
| ($/t) | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 150 | -791 | -671 | -551 | -431 | -311 | -191 | -71 |
| 200 | -641 | -471 | -301 | -131 | 39 | 209 | 379 |
| 250 | -491 | -271 | -51 | 169 | 389 | 609 | 829 |
| 300 | -341 | -71 | 199 | 469 | 736 | 1009 | 1279 |

**Breakeven Analysis (Gross Margin Breakeven)**
Breakeven yield at a price/tonne of $250/tonne = 5.23t/ha
Breakeven Price/tonne at a yield of 8.5/ha = $165.40/tonne

**NOTES:**
1. Maize has a high nutritional requirement and is particularly sensitive to N, K and Zn deficiencies.
2. Pre-plant zinc can be applied by fertigation or as a blend with granular fertilizers.
3. Zinc application may only be required once every 3-5 years.
4. Blain soils and other light textures soils are inherently low in most essential elements.
5. One insecticide application may be required for most irrigated maize crops.
6. Fertiliser requirements should be based on soil analysis.

## GROSS MARGIN BUDGET

### Zero-Till Sesame

ENTERPRISE NAME: Zero - Till Sesame REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| **INCOME** | | $/ha | Your Estimate |
|---|---|---|---|
| Yield | 0.6 t/ha @ $1100/tonne | 660 | |
| Other Income | | | |
| -Fertiliser Subsidy | 300kg @ $55/tonne | 18 | |
| **A. TOTAL INCOME** | | **678** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| Control Grazing | | | |
| 1 Knock - Down Spray (RoundupCT) | 2.5 L/ha @ $6.75/L | 17 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Sowing | | | |
| Seed | 4 kg/ha @ $2.20 kg | 9 | |
| Sowing Operation | 3.84 ha/h @ $16.60/h | 4 | |
| Fertilisers | | | |
| NPKS (19-13-0-9) | 100 kg/ha @ $592/tonne | 59 | |
| Urea | 100 kg/ha @ $425/tonne | 43 | |
| Muriate of Potash (MOP) | 100 kg/ha @ $475/tonne | 48 | |
| 1 application (pre-planting) | 7.20 ha/h @ $16.65/h | 2 | |
| 1 application (post-planting) | 9.36 ha/h @ $16.65/h | 2 | |
| Pest Control | | | |
| Lorsban | 1 L/ha @ $16.00/L | 16 | |
| 1 aerial application | 1 h/ha @ $20.00/h | 20 | |
| Desiccation | | | |
| Reglone | 2 L/ha @ $17.35/L | 35 | |
| 1 aerial application | 1 h/ha @ $20.00/h | 20 | |
| Harvesting | | | |
| Heading (own harvester) | 2.10 ha/h @ $82.07/h | 39 | |
| Marketing | | | |
| Clean & Grade [1] | @ $125/tonne | 75 | |
| Bag | @ $25/tonne | 15 | |
| Freight to Depot | @ $30/tonne | 18 | |
| Research Levy (from 2001) | @ $5.00/tonne | 3 | |
| **B. TOTAL VARIABLE COSTS** | | **426** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **251** | |

[1] Costs for cleaning and grading have tripled since 1995-96. Cheaper alternatives may be available.

**Sensitivity of Sesame Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | |
|---|---|---|---|---|---|
| ($/t) | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
| 700 | -195 | -92 | 11 | 114 | 217 |
| 800 | -175 | -52 | 71 | 194 | 317 |
| 900 | -155 | -12 | 131 | 274 | 417 |
| 1000 | -135 | 28 | 191 | 354 | 517 |
| 1100 | -115 | 68 | 251 | 434 | 617 |
| 1200 | -95 | 108 | 311 | 514 | 717 |
| 1500 | -35 | 228 | 491 | 754 | 1017 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at a price of $1100/tonne = 0.33 t/ha
Breakeven Price at a yield of 0.6 t/ha = $682.40/tonne

## GROSS MARGIN BUDGET

### Zero-Till A Grade Mung Beans

ENTERPRISE NAME: Zero-till A Grade Mung Beans REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| | | $/ha | Your Estimate |
|---|---|---|---|
| **INCOME** | | | |
| Yield | 1 t/ha | | |
| Grade A | 0.80 t/ha @ $565/tonne | 452 | |
| Splits | 0.20 t/ha @ $220/tonne | 44 | |
| Other Income | | | |
| - Fertiliser Subsidy | 250 kg @ $55/tonne | 14 | |
| **A. TOTAL INCOME** | | **510** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| Control Grazing | | | |
| 1 knock down spray (RoundupCT) | 2.5 L/ha @ $6.75/L | 17 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Sowing | | | |
| Seed (Putland) | 15 kg/ha @ $1.90/kg | 29 | |
| Sowing Operation | 3.84 ha/h @ $16.60/h | 4 | |
| Fertilisers | | | |
| Superphosphate | 200 kg/ha @ $372/tonne | 74 | |
| Muriate of Potash (MOP) | 50 kg/ha @ $475/tonne | 24 | |
| 1 application (pre-planting) | 7.2 ha/h @ $16.65/h | 2 | |
| Weed Control | | | |
| Spinnaker (pre-emergent) | 300 mL/ha @ $114.00/L | 34 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Pest Control | | | |
| Lorsban | 1 L/ha @ $16.00/L | 16 | |
| 1 aerial application | @ $30/ha | 30 | |
| Harvesting | | | |
| Heading (own harvester) | 2.10 ha/h @ $82.07/h | 39 | |
| Marketing | | | |
| Clean & Grade [1] | @ $125/tonne | 125 | |
| Bag | @ $25/tonne | 25 | |
| Cartage to Depot | @ $30/tonne | 30 | |
| Handling Charges | @ $0.00 | 0 | |
| **B. TOTAL VARIABLE COSTS** | | **453** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **57** | |

[1] Costs for cleaning and grading have tripled since 1995-96. Cheaper alternatives may be available.

**Sensitivity of A Grade Mung Beans Gross Margin ($/ha) to Varying Yields and Prices (Assuming 80% B Grade & 20% Splits and A Grade Price + $220tonne for Splits)**

| Price | Yield (tonnes per hectare) | | | | | | |
|---|---|---|---|---|---|---|---|
| ($/t) | 0.5 | 0.8 | 1.1 | 1.4 | 1.7 | 2.0 | 2.3 |
| 400 | -167 | -112 | -57 | -2 | 53 | 109 | 164 |
| 500 | -127 | -48 | 31 | 110 | 189 | 269 | 348 |
| 565 | -101 | -7 | 88 | 183 | 278 | 373 | 467 |
| 600 | -87 | 16 | 119 | 222 | 325 | 429 | 532 |
| 700 | -47 | 80 | 207 | 334 | 461 | 589 | 716 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at the Grade A price of $565/tonne = 0.82 t/ha
Breakeven Price at a yield of 1.0 t/ha = $494.30/tonne Grade A Mung Beans

## GROSS MARGIN BUDGET

### Cavalcade Hay

ENTERPRISE NAME: Cavalcade Hay REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| | | $/ha | Your Estimate |
|---|---|---|---|
| **INCOME** | | | |
| Yield | 6.00 t/ha @ $150/tonne | 900 | |
| Other Income | | | |
| -Fertiliser Subsidy | 300 kg @ $55/tonne | 17 | |
| **A. TOTAL INCOME** | | **917** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| Control Grazing | | | |
| 1 Knock Down Spray (RoundupCT) | 2.5 L/h @ $6.75/h | 17 | |
| 1 Application | 9.36 ha/h @ $17.53/h | 2 | |
| Sowing | | | |
| Seed | 10 kg/ha @ $6.00/kg | 60 | |
| Sowing Operation | 3.84 ha/h @ $16.60/h | 4 | |
| Fertilisers | | | |
| Super + Cu + Mo + Zn (10) | 200 kg/ha @ $428/tonne | 86 | |
| Muriate of Potash (MOP) | 100 kg/ha @ $475/tonne | 48 | |
| 1 application (pre-planting) | 7.2 ha/h @ $16.65/h | 2 | |
| Weed Control | | | |
| Spinnaker (pre-emergent) | 300 mL/ha @ $114/L | 34 | |
| 1 application | 9.36 ha/h @ $17.53/h | 2 | |
| Harvesting (own machinery) | | | |
| Mow/Condition | 0.84 ha/h @ $21.48/h | 26 | |
| Round Baling | 0.58 ha/h @ $21.73/h | 38 | |
| Wrapping | 4 bale/t @ $1.33/bale | 32 | |
| Marketing Freight to Depot | @ $30.00/tonne | 180 | |
| **B. TOTAL VARIABLE COSTS** | | **530** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **387** | |

**Sensitivity of Cavalcade Hay Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | | |
|---|---|---|---|---|---|---|
| ($/t) | 2 | 3 | 4 | 5 | 6 | 7 |
| 100 | -172 | -107 | -43 | 22 | 87 | 151 |
| 125 | -122 | -32 | 57 | 147 | 237 | 326 |
| 150 | -72 | 43 | 157 | 272 | 387 | 501 |
| 175 | -22 | 118 | 257 | 397 | 537 | 676 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at a price of $150/tonne = 2.63 t/ha
Breakeven Price at a yield of 6 t/ha = $85.55/tonne

**NOTE:**

| | |
|---|---|
| 800 x 800 | 0.50 tonne |
| 800 x 1200 | 0.75 tonne |
| 1200 x 1200 | 1.00 tonne |
| round bales | |
| 4 ft | 220-250 kg |
| 5 ft | 300-320 kg |

## GROSS MARGIN BUDGET

### Dry Season Irrigated Peanuts

ENTERPRISE NAME: Dry Season Irrigated Peanuts REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 hectare DATE: May 2000

| **INCOME** | | $/ha | Your Estimate |
|---|---|---|---|
| Yield | 3.75 t/ha @ $730/tonne | 2738 | |
| Other Income | | | |
| Fertiliser Subsidy | 1115 kg @ $55/tonne | 61 | |
| **A. TOTAL INCOME** | | **2799** | |
| **VARIABLE COSTS** | | | |
| **Land Preparation** | | | |
| 2 Disc Ploughing | 5.04 ha/h @ $29.19/h | 12 | |
| 1 Chisel Ploughing (or moldboard) | 5.04 ha/h @ $29.19/h | 6 | |
| 1 Scarifier Harrowing (or hilling) | 4.48 ha/h @ $31.07/h | 7 | |
| **Sowing** | | | |
| Seed | 140 kg/ha @ $2.40/kg | 336 | |
| Sowing Operation | 4.20 ha/h @ $16.65/h | 4 | |
| Inoculant | 100 kg/ha @ $0.05/kg | 5 | |
| **Fertilisers** | | | |
| Goldphos 20 | 200 kg/ha @ $570/tonne | 114 | |
| Gypsum | 750 kg/ha @ $190/tonne | 143 | |
| MOP | 120 kg/ha @ $475/tonne | 57 | |
| Zinc hepta hydrate | 4 kg/ha @ $840/tonne | 3 | |
| Mag Sulphate | 4 kg/ha @ $1/kg | 4 | |
| Manganese sulphate | 4 kg/ha @ $1/kg | 4 | |
| Copper sulphate | 4 kg/ha @ $2.20/kg | 9 | |
| Urea | 26 kg/ha @ $425/tonne | 11 | |
| Boron | 2 kg/ha @ $3.40/kg | 7 | |
| Sodium Molybdate | 1 kg/ha @ $11.50/kg | 12 | |
| 3 spreading applications | 7.20 ha/h @ $16.65/h | 7 | |
| **Weed Control** | | | |
| Spinnaker | 0.5 L/ha @ $114/L | 57 | |
| Basagran | 1 L/ha @ $30.00/L | 30 | |
| Blazer | 1 L/ha @ $29.00/L | 29 | |
| 2, 4-DB | 1 L/h @ $12.00/L | 12 | |
| Verdict | 0.60L/h @ $60.00/L | 36 | |
| **Wetting Agents** | | | |
| Liase | 2 L/ha @ $5.85/L | 12 | |
| Agral | 0.50 L/ha @ $ 2.40/L | 1 | |
| Dctron | 1 L/ha @ $1.90/L | 2 | |
| Agridex | 3.50 L/ha @ $5.40/5L | 19 | |
| 3 applications | 9.36 ha/h @ $17.53/h | 6 | |
| **Insect Control** | | | |
| Endosulfan (twice) | 2.10 L/ha @ $9.70/L | 41 | |
| 2 applications | 9.36 ha/h @ $17.53/h | 4 | |
| **Fungicide** | | | |
| Folicur | 0.45 L/ha @ $135/L | 61 | |
| Rover 500 (x6) | 2 L/ha @ $14/L | 168 | |
| 7 applications | 9.36 ha/h @ $17.53/h | 13 | |

| | | | |
|---|---|---|---|
| **Irrigation** | 6.00 MegaL/ha @ $55.00/ML | 330 | |
| **Harvesting** | | | |
| Cutting/digging | | 25 | |
| Threshing (contract rates) | 1.00 ha/h @ $25.00/h | 225 | |
| Cleaning | 1.00 ha/h @ $225.00/h | 56 | |
| Drying | $15/t | 23 | |
| | $6/t | | |
| **Marketing** | | | |
| Cartage to Kingaroy (Qld) | $95.00/t | 356 | |
| **B. TOTAL VARIABLE COSTS** | | **2244** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **555** | |

**Sensitivity of Peanuts Gross Margin ($/ha) to Varying Yields and Prices**

| **Price** | **Yield (tonnes per hectare)** | | | | |
|---|---|---|---|---|---|
| **($/t)** | **2** | **3** | **4** | **5** | **6** |
| 500 | -980 | -596 | -212 | 172 | 556 |
| 600 | -780 | -296 | 188 | 672 | 1156 |
| 750 | -480 | 154 | 788 | 1422 | 2056 |
| 729 | -522 | 91 | 704 | 1317 | 1930 |
| 800 | -380 | 304 | 988 | 1672 | 2356 |

**Breakeven Analysis (Gross Margin Breakeven)**

Breakeven Yield at a price of $730/tonne = 2.83 t/ha
Breakeven Price at a yield of 3.75 t/ha = $580.47/tonne

**NOTES:**

1. Research to date indicates that yields may be higher if appropriate conditions are met.
2. Foliar fertilisers can be incorporated with fungicide applications.
3. Contract rates for various activities will be higher.
4. Mouldboard/square plough would be lower than chisel plough.

## GROSS MARGIN BUDGET

### Dry Season Rice

ENTERPRISE NAME: Rice (Dry Season**)** REGION: Adelaide River Plains
ENTERPRISE UNIT: 1 Hectare DATE: May 2000

| | | $/ha | Your Estimate |
|---|---|---|---|
| **INCOME** | | | |
| Yield | 4 t/ha @ $260/tonne | 1040 | |
| Other Income | | | |
| -Fertiliser Subsidy | 300 kg @ $55/tonne | 17 | |
| **A. TOTAL INCOME** | | **1057** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| 1 Disc Ploughing | 5.04 ha/h @ $29.19/h | 6 | |
| 2 Cultivation | 5.04 ha/h @ $29.19/h | 12 | |
| 1 Laser Levelling (assume 1/3 of area levelled yearly) | 1 ha/h @ $55.00 | 18 | |
| Sowing | | | |
| Seed | 100kg/ha @ $0.50/kg | 50 | |
| Sowing Operation | 3.84 ha/h @ $16.60/h | 4 | |
| Fertilisers | | | |
| Urea | 200kg/ha @ $425/tonne | 85 | |
| Dbl. Super + Zinc | 100kg/ha @ $580/tonne | 58 | |
| 1 aerial application | 1 ha @ $30/ha | 30 | |
| 1 application (with sowing) | 3.84 ha/h @ $16.60/h | 4 | |
| Weed Control | | | |
| Propanil | 8 L/ha @ $11.00/L | 88 | |
| Saturn | 2 L/ha @ $15.00/L | 30 | |
| 1 aerial application | 1 ha @ $20/ha | 20 | |
| Pest Control | | | |
| Ammunition (for birds) | | 10 | |
| Allowance for pest control | | 35 | |
| Harvesting | | | |
| Contract Harvester | 2.33 ha/h @ $180/h | 77 | |
| Marketing | | | |
| Freight to Enduser | @ $30/tonne | 120 | |
| **B. TOTAL VARIABLE COSTS** | | **648** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **409** | |

**Sensitivity of Rice Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | |
|---|---|---|---|---|---|
| ($/t) | 1 | 2 | 3 | 4 | 5 |
| 200 | -341 | -171 | -1 | 169 | 339 |
| 230 | -311 | -111 | 89 | 289 | 489 |
| 260 | -281 | -51 | 179 | 409 | 639 |
| 300 | -241 | 29 | 299 | 569 | 839 |

**Breakeven Analysis (Gross Margin Breakeven)**
Breakeven yield at a price/tonne of $260/tonne = 2.22 t/ha
Breakeven Price/tonne at a yield of 4/ha = $157.78/tonne

**Note**
Hay can be made from rice stalks at a rate of 5 tonnes per ha.
The current price of rice hay is $150/tonne with 5 bales per tonne.
The contract rate to mow/rake/roll (round bales) is $14/bale.

## GROSS MARGIN BUDGET

### Irrigated Soybean

ENTERPRISE NAME: Irrigated Soybean REGION: Katherine/Douglas-Daly
ENTERPRISE UNIT: 1 Hectare DATE: May 2000

| **INCOME** | | $/ha | Your Estimate |
|---|---|---|---|
| Yield | 2.25 t/ha @ $595/tonne | 1339 | |
| Other Income | | | |
| -Fertiliser Subsidy | 400 kg @ $55/tonne | 22 | |
| **A. TOTAL INCOME** | | **1361** | |
| **VARIABLE COSTS** | | | |
| Land Preparation | | | |
| 1 Disc Ploughing | 5.04 ha/h @ $29.19/h | 6 | |
| 1 Chisel Ploughing | 5.04 ha/h @ $29.19/h | 6 | |
| Harrowing | 8.40 ha/h @ $13.59 | 2 | |
| Sowing | | | |
| Seed | 80kg/ha @ $1.50/kg | 120 | |
| Sowing Operation | 3.84 ha/h @ $16.60/h | 4 | |
| Inoculant | 3pkts/ha @ $5.00/pkt | 15 | |
| Fertilisers | | | |
| Super (Single) + Zinc | 300kg/ha @ $486/tonne | 146 | |
| MOP | 100kg/ha @ $475/tonne | 48 | |
| 3 applications | 7.20 ha/h @ $16.65/h | 7 | |
| Weed Control | | | |
| Spinnaker (pre-emerge) | 300ml @ $114.00/L | 34 | |
| 1 application | 9.36 ha/h @ $17.53/ha | 2 | |
| Insect Control | | | |
| Endosulfan | 2 L/ha @ $9.70/L | 19 | |
| Decis | 0.5 L/ha @ $34.00/L | 17 | |
| aerial application | 2 @ $20/ha | 40 | |
| Harvesting | | | |
| Own Harvester | 2.10 ha/h @ $82.07/h | 39 | |
| Irrigation | 6.00 Mega L/ha @ $ 55.00/Mega L | 330 | |
| Marketing | | | |
| Cartage to Depot | @ $30/tonne | 68 | |
| **B. TOTAL VARIABLE COSTS** | | **902** | |
| **C. GROSS MARGIN PER HECTARE (A-B)** | | **459** | |

**Sensitivity of Soybean Gross Margin ($/ha) to Varying Yields and Prices**

| Price | Yield (tonnes per hectare) | | | | | |
|---|---|---|---|---|---|---|
| ($/t) | 1 | 2 | 3 | 4 | 5 | 6 |
| 300 | -542 | -272 | -2 | 268 | 538 | 808 |
| 400 | -442 | -72 | 298 | 668 | 1038 | 1408 |
| 500 | -342 | 128 | 598 | 1068 | 1538 | 2008 |
| 550 | -292 | 228 | 748 | 1268 | 1788 | 2308 |
| 595 | -247 | 318 | 883 | 1448 | 2013 | 2578 |
| 650 | -192 | 428 | 1048 | 1668 | 2288 | 2908 |

**Breakeven Analysis (Gross Margin Breakeven)**
Breakeven yield at a price/tonne of $595/tonne = 1.44 t/ha
Breakeven Price/tonne at a yield of 2.25/ha = $391.03/tonne

**NOTE:**
1. Present cleaning, grading and bagging costs, if required, are $175/tonne. These costs have tripled since 1995-96.
2. Prices paid for Soybean are variable.
3. Fertilizer subsidy may be phased out.

# Appendix A: Machinery Work Rates

| | | Tractor Details | | Implement Details | | | Field Eff. % | Work Rate ha/h |
|---|---|---|---|---|---|---|---|---|
| **Operation** | **Implement** | **PTO (kW)** | **Price ($)** | **Width (m)** | **Price ($)** | **Speed (kph)** | | |
| Ploughing | Offset Discs | 145 | 111800 | 9 | 65000 | 8 | 70 | 5.04 |
| Chisel Ploughing | Chisel Plough | 145 | 111800 | 9 | 65000 | 8 | 70 | 5.04 |
| Cultivation | Cultivator | 145 | 111800 | 10 | 78000 | 9 | 70 | 6.30 |
| Harrowing | Harrows | 79 | 70950 | 12 | 16000 | 10 | 70 | 8.40 |
| Sowing | Combine | 79 | 70950 | 6 | 35000 | 8 | 80 | 3.84 |
| Sowing | Row Crop Planter | 79 | 70950 | 6 | 47000 | 10 | 70 | 4.20 |
| Spreading | Spreader | 79 | 70950 | 10 | 19500 | 12 | 60 | 7.20 |
| Spraying | Boom Spray | 79 | 70950 | 12 | 23000 | 12 | 65 | 9.36 |
| Harvesting | Header (sorghum) | | | 6 | 220000 | 7 | 75 | 3.15 |
| Harvesting | Header (Maize, Sesame etc) | | | 6 | 220000 | 5 | 70 | 2.10 |
| Harvesting Hay | Mower/Conditioner | 79 | 70950 | 2.8 | 35000 | 4 | 75 | 0.84 |
| Baling Hay | Baler | 79 | 70950 | 3.2 | 36000 | 3 | 60 | 0.58 |
| | | | A | B | C | D | E | F |

**NOTES:**

$$\text{Work Rate (Ha/h)} = \frac{\text{Width x Speed x Field efficiency (\%)}}{1000}$$

# Appendix B: Machinery Operating Costs

| Implement | Fuel ($/L) | Repairs & Maint. Prop. of Price | | Expected Life | | Fuel Used (L/h) | Fuel & Oil ($/h) | Repairs & Maint. | | Total Operating Cost ($/h) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Tractor | Implement | |
| | | Tractor (%) | Implement % | Tractor (h) | Implement (h) | | | ($/h) | ($/h) | |
| Offset Discs | 0.43 | 72 | 20 | 10000 | 2400 | 33 | 15.72 | 8.05 | 5.42 | 29.19 |
| Chisel Plough | 0.43 | 72 | 20 | 10000 | 2400 | 33 | 15.72 | 8.05 | 5.42 | 29.19 |
| Cultivator | 0.43 | 72 | 20 | 10000 | 2400 | 33 | 15.72 | 8.05 | 6.50 | 30.27 |
| Harrows | 0.43 | 72 | 20 | 10000 | 2400 | 15 | 7.14 | 5.11 | 1.33 | 13.59 |
| Combine Planter | 0.43 | 72 | 20 | 10000 | 2400 | 18 | 8.57 | 5.11 | 2.92 | 16.60 |
| Row Crop Planter | 0.43 | 72 | 20 | 10000 | 2400 | 16 | 7.62 | 5.11 | 3.92 | 16.65 |
| Spreader | 0.43 | 72 | 30 | 10000 | 1200 | 14 | 6.67 | 5.11 | 4.88 | 16.65 |
| Boom Spray | 0.43 | 72 | 30 | 10000 | 1200 | 14 | 6.67 | 5.11 | 5.75 | 17.53 |
| Header (sorghum) | 0.43 | 72 | 50 | 10000 | 1800 | 44 | 20.96 | 0.00 | 61.11 | 82.07 |
| Header (maize, sesame etc) | 0.43 | 72 | 50 | 10000 | 1800 | 44 | 20.96 | 0.00 | 61.11 | 82.07 |
| Mower/Conditioner | 0.43 | 72 | 30 | 10000 | 1200 | 16 | 7.62 | 5.11 | 8.75 | 21.48 |
| Baler | 0.43 | 72 | 30 | 10000 | 1200 | 16 | 7.62 | 5.11 | 9.00 | 21.73 |
| | G | H | I | J | K | L | M | N | O | P |

Notes

1. Columns F and P provide estimates used in the standardised GM budgets.
2. Reductions in field operating efficiency occur due to; turning at the end of a paddock, failure to use full implement width, time taken to load seed and fertiliser, unloading of harvested crops, minor adjustments and repairs and lubrication whilst in the field.
3. Actual header speed and efficiency will vary for each crop.
4. The fuel price is calculated net of fuel rebates.
5. R&M costs are expressed as a percentage of the new purchase price.
6. M = 1.1 G*L
   N = (A*H)/(J*100)
   O = (C*I)/(K*100)
   P = M + N + O

# Appendix C: Farm Costs and Prices Used in Budgets

| | |
|---|---|
| **Fertiliser** | |
| Muriate of Potash (MOP) | $475/t |
| Urea | $425/t |
| Superphosphate | $372/t |
| Superphosphate + Zinc | $486/t |
| Double Superphosphate | $590/t |
| Double Superphosphate + Zinc | $580/t |
| Super + Cu + Mo + Zn (10) | $428/t |
| NPKS (19-10-0-13) + Zinc | $568/t |
| NPKS (19-13-0-9) | $592/t |
| Triple Super + 10% S | $650/t |
| Gypsum | $190/t |
| Super Potash 3+1 | $497/t |
| NPK +S +Zn | $730/t |
| K-Komplex | $5.30/L |
| DAP | $658/t |
| Zinc hepta-hydrate | $840/t |
| DAP/SOA | $612/t |
| DAP + TE | $750/t |
| Goldphos 20 | $570/t |
| General trace mix | $9.20/kg |
| Mag sulphate | $1.00/kg |
| Manganese sulphate | $1.00/kg |
| Copper sulphate | $2.20/kg |
| Boron | $3.40/kg |
| Sodium Molybdate | $11.50/kg |
| **Herbicide** | |
| Treflan | $8.50/L |
| Atrazine | $6.90/kg |
| Dual | $23.00/L |
| Roundup CT | $6.75/L |
| Basagran | $30.00/L |
| Saturn | $15.00/L |
| Propanil | $11.00/L |
| Inoculant | $0.05/kg |
| Spinnaker | $114.00/L |
| Sertin-D C torn | $29.00/L |
| Blazer | $29.00/L |
| Fusilade | $63.00/L |
| 2,4-DB | $12.00/L |
| Verdict | $60.00/L |
| **Insecticide** | |
| Bravo | $14.50/L |
| Thiodan | $9.70/L |
| Endosulfan | $9.70/L |
| Folicur/Agridex | $76.00/L |
| Arial Spraying | $20.00/ha |
| Lannate | $288/20 L |
| Decis | $34.00/L |
| **Desiccants** | |
| Reglone | $17.35/L |
| **Seed** | |
| Sorghum | $5.20/kg |
| Maize (Hycorn 90) | $6.20/kg |
| Sesame | $2.20/kg |
| Mung Beans (Putland) | $1.90/kg |
| Calvacade Hay | $6.00/kg |
| Rice | $0.50/kg |
| Peanuts | $2.40/kg |

| | |
|---|---|
| Soybean | $1.50/kg |
| **Contracts** | |
| Cleaning & grading | |
| - Mung Beans | $125.00/t |
| - Sesame | $125.00/t |
| Bagging | $25.00/t |
| Cartage | $30.00/t |
| Cartage (Katherine) | $30.00/t |
| Cartage to Kingaroy (Qld) | $95.00/t |
| Aerial Spraying | $30.00/t |
| Harvesting | $180.00/h |
| Handling Charges | $0/h |
| Threshing | $225.00/t |
| **Other** | |
| Bale wrap | $1.33/bale |
| Fertiliser subsidy | $55.00/t |
| Diesel fuel | 80 cents/L |
| Comm. diesel rebate | 34.697 cents/L |
| NT diesel rebate | 2 cents/L |
| Laser Levelling | $55.00/h |
| **Produce Price** | |
| Mung Beans - Grade 'A` | $565/t |
| Mung Beans - Splits | $220/t |
| Sorghum | $180/t |
| Irr Maize | $230/t |
| Maize | $230/t |
| Sesame | $1100/t |
| Cavalcade Hay | $150/t |
| Rice | $260/t |
| Peanuts | $730/t |
| Peanut Hay | $150/t |
| Soybean | $595/t |
| **Expected Yield** | |
| Mung Beans | 1 t/ha |
| Mung Beans - Splits | 20% |
| Sorghum | 2.5 t/ha |
| Irrigated Maize | 8.5t/ha |
| Maize | 3 t/ha |
| Sesame | 0.6 t/ha |
| Cavalcade Hay | 6 t/ha |
| Irrigated Rice | 6 t/ha |
| Rice | 4 t/ha |
| Peanuts (dryland) | 2.75 t/ha |
| Peanuts (wet season, irrigated) | 5 t/ha |
| Peanuts (dry season, irrigated) | 3.75 t/ha |
| Soybean | 2.25 t/ha |
| **Miscellaneous** | |
| Agistment | $2.00/hd/week |
| Irrigation | $55.00/mgL |
| Cleaning | $15.00/ha |
| Furrow bedding | $14.00/ha |
| Drying | $6.00/tonne |
| **Wetting Agent** | |
| Agridex | $5.40/L |
| Agral | $2.40/L |
| Dctron | $1.90/L |
| Liase | $5.85/L |
| **Others** | |
| Owner harvester | $76.87/h |
| Inoculant | $5.00/pkt |
| Scarify | $5/ha |
| Aerial spraying | $15.00/ha |

| | | |
|---|---|---|
| **Fungicide** | | |
| | Rover | $14.00/L |
| | Folicur | $135.00/L |
| | Primextra | $9.95/L |
| | Larvin | $24.00/L |
| | Lorsban | $16.00/L |
| | Research Levy | $5.00/t |

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