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CROP GROSS MARGIN BUDGETS FOR THE KATHERINE - DALY REGION 1997-98

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Northern Territory Department of
Primary Industry and Fisheries

CROP GROSS MARGIN BUDGETS

FOR THE KATHERINE - DALY REGION

1997-98

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1. INTRODUCTION AND SOME IMPORTANT NOTES

The standardised gross margin budgets for the Katherine/Daly region are presented in this booklet. 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 of the mark. That doesn't mean we're 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, however, 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 DPIF 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 don't 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 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 have been budgeted at 38¢/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. The NT fertiliser freight subsidy is currently under review. Separate advise will be provided in early 1998.

(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 chemical contrary to their label specifications. Contact the DPIF for further information if required.

(c) A commercial grain handling and storage facility is operated at Katherine by Crennex Pty Ltd trading as NT Grain.

(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 DPIF, 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.

2. 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 received from the sales 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 technique.

GROSS MARGIN BUDGET

ENTERPRISE NAME: Zero-Till Sorghum
ENTERPRISE UNIT: 1 hectare

REGION: Katherine/Daly
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	2.70 t/ha @ $275/tonne	743	
Other Income			
- Fertiliser Subsidy	275 kg @ $95/tonne	26	
- Agistment	17 weeks @ $2.00/hd/week	34	
A. TOTAL INCOME		**803**	
VARIABLE COSTS			
Land Preparation			
Control Grazing			
1 Knock Down Spray (RoundupCT)	2 L/ha @ $9.00/L	18	
1 application	9.36 ha/h @ $15.78/h	2	
Sowing			
Seed	8 kg/ha @ $3.70/kg	30	
Sowing Operation	4.2 ha/h @ $16.00/h	4	
Fertilisers			
NPKS (19-10-0-13)	150 kg/ha @ $650/tonne	98	
Urea	75 kg/ha @ $530/tonne	40	
Muriate of Potash (MOP)	50 kg/ha @ $380/tonne	19	
2 application (pre-planting)	7.2 ha/h @ $14.53/h	4	
1 application (post-planting)	7.2 ha/h @ $14.53/h	2	
Weed Control			
Atrazine	3 L/ha @ $6.00/L	18	
1 application	9.36 ha/h @ $15.78/h	2	
Harvesting			
Heading	3.15 ha/h @ $76.87/h	24	
Marketing			
Freight to Enduser	@ $30/tonne	81	
B. TOTAL VARIABLE COSTS		**340**	
C. GROSS MARGIN PER HECTARE (A-B)		**462**	

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

Price	Yield (tonnes per hectare)					
($/t)	1.5	2.0	2.5	2.7	3.0	3.5
125	-57	-9	38	57	86	133
175	18	91	163	192	236	308
220	86	181	276	314	371	466
235	108	211	313	354	416	518
285	183	311	438	489	566	693
335	258	411	563	624	716	868

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $275/tonne = 0.81 t/ha
Breakeven Price at a yield of 2.7 t/ha = $103.84/tonne

GROSS MARGIN BUDGET

ENTERPRISE NAME: Zero-Till Maize
ENTERPRISE UNIT: 1 hectare
REGION: Katherine/Daly
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	3 t/ha @ $280/tonne	840	
Other Income			
- Fertiliser Subsidy	300 kg @ $95/tonne	29	
- Agistment	17 weeks @ $2.00/hd/week	34	
A. TOTAL INCOME		**903**	
VARIABLE COSTS			
Land Preparation			
Control Grazing			
1 Knock Down Spray (RoundupCT)	2 L/ha @ $9.00/L	18	
1 application	9.36 ha/h @ $15.78/h	2	
Sowing			
Seed (Hycorn 90)	17 kg/ha @ $8.00/kg	136	
Sowing Operation	4.2 ha/h @ $16.00/h	4	
Fertilisers			
NPKS (19-10-0-13)	150 kg/ha @ $650/tonne	98	
Urea	150 kg/ha @ $530/tonne	80	
1 application (pre-planting)	7.2 ha/h @ $14.53/h	2	
1 application (post-planting)	7.2 ha/h @ $14.53/h	2	
Weed Control			
Atrazine	3 L/ha @ $6.00/L	18	
Dual	2 L/ha @ $23.00/L	46	
1 application (post-planting)	9.36 ha/h @ $15.78/h	2	
Harvesting			
Heading (own harvester)	2.1 ha/h @ $76.87/h	37	
Marketing			
Freight to Enduser	@ $30/tonne	90	
B. TOTAL VARIABLE COSTS		**533**	
C. GROSS MARGIN PER HECTARE (A-B)		**370**	

Sensitivity of Maize 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
220	-95	0	95	190	285	380
245	-58	50	157	265	372	480
280	-5	120	245	**370**	495	620
340	85	240	395	550	705	860
400	175	360	545	730	915	1100
460	265	480	695	910	1125	1340

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $280/tonne = 1.52 t/ha
Breakeven Price at a yield of 3 t/ha = $156.77/tonne

GROSS MARGIN BUDGET

ENTERPRISE NAME: No - Till Sesame
ENTERPRISE UNIT: 1 hectare

REGION: Katherine/Daly
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	0.6 t/ha @ $1200/tonne	720	
Other Income			
-Fertiliser Subsidy	225 kg @ $95/tonne	21	
A. TOTAL INCOME		**741**	
VARIABLE COSTS			
Land Preparation			
Control Grazing			
1 Knock - Down Spray (RoundupCT)	2 L/ha @ $9.00/L	18	
1 application	9.36 ha/h @ $15.78/h	2	
Sowing			
Seed	4 kg/ha @ $1.90 kg	8	
Sowing Operation	3.84 ha/h @ $15.68/h	4	
Fertilisers			
NPKS (19-13-0-9)	155 kg/ha @ $680/tonne	105	
Urea	70 kg/ha @ $530/tonne	37	
Muriate of Potash (MOP)	50 kg/ha @ $380/tonne	19	
1 application (pre-planting)	7.2 ha/h @ $14.53/h	2	
Pest Control			
Endosuflan	1 L/ha @ $13.50/L	14	
1 aerial application	1 h/ha @ $20.00/h	20	
Desiccation			
Reglone	2 L/ha @ $19.30/L	39	
1 aerial application	1 h/ha @ $20.00/h	20	
Harvesting			
Heading (own harvester)	2.10 ha/h @ $76.87/h	37	
Marketing			
Clean & Grade [1]	@ $150/tonne	90	
Bag	@ $25/tonne	15	
Freight to Depot	@ $30/tonne	18	
B. TOTAL VARIABLE COSTS		**447**	
C. GROSS MARGIN PER HECTARE (A-B)		**295**	

[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	0.35	0.6	1.0	1.5
700	-203	-129	-5	193	440
800	-183	-94	55	293	590
900	-163	-59	115	393	740
1000	-143	-24	175	493	890
1100	-123	11	235	593	1040
1150	-113	29	265	643	1115
1500	-43	151	475	993	1640

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $1200/tonne = 0.30 t/ha
Breakeven Price at a yield of 0.6 t/ha = $708.70/tonne

GROSS MARGIN BUDGET

ENTERPRISE NAME: Zero-till A Grade Mung Beans — REGION: Katherine/Daly
ENTERPRISE UNIT: 1 hectare — DATE: November 1997

		$/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 @ $95/tonne	24	
A. TOTAL INCOME		**520**	
VARIABLE COSTS			
Land Preparation			
Control Grazing			
1 knock down spray (RoundupCT)	2 L/ha @ $9.00/L	18	
1 application	9.36 ha/h @ $15.78/h	2	
Sowing			
Seed (Putland)	15 kg/ha @ $1.90/kg	29	
Sowing Operation	3.84 ha/h @ $15.68/h	4	
Fertilisers			
Superphosphate	200 kg/ha @ $426/tonne	85	
Muriate of Potash (MOP)	50 kg/ha @ $380/tonne	19	
1 application (pre-planting)	7.2 ha/h @ $14.53/h	2	
Pest Control			
Thiodan	2 L/ha @ $9.15/L	18	
1 aerial application	@ $30/ha	30	
Harvesting			
Heading (own harvester)	2.10 ha/h @ $76.87/h	37	
Marketing			
Clean & Grade [1]	@ $150/tonne	150	
Bag	@ $25/tonne	25	
Cartage to Depot	@ $30/tonne	30	
B. TOTAL VARIABLE COSTS		**448**	
C. GROSS MARGIN PER HECTARE (A-B)		**71**	

[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 + $220onne for Splits)

Price	Yield (tonnes per hectare)						
($/t)	0.5	0.8	1.0	1.5	2.0	2.5	3.0
400	-140	-92	-61	19	98	178	257
500	-100	-28	19	139	258	378	497
565	-74	13	71	217	362	508	653
600	-60	36	99	259	418	578	737
700	-20	100	179	379	578	778	977
800	-4	140	236	475	715	954	1194
900	60	228	339	619	898	1178	1457
1000	100	292	419	739	1058	1378	1697

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at the Grade A price of $565/tonne = 0.75 t/ha
Breakeven Price at a yield of 1.0 t/ha = $475.80/tonne Grade A Mung Beans

GROSS MARGIN BUDGET

ENTERPRISE NAME: Cavalcade Hay
ENTERPRISE UNIT: 1 hectare

REGION: Katherine/Daly
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	7.00 t/ha @ $170/tonne	1190	
Other Income			
-Fertiliser Subsidy	250 kg @ $95/tonne	24	
A. TOTAL INCOME		**1214**	
VARIABLE COSTS			
Land Preparation			
1 Disc Ploughing	4.48 ha/h @ $29.72/h	7	
2 Cultivation	6.30 ha/h @ $29.84/h	9	
Sowing			
Seed	10 kg/ha @ $9.00/kg	90	
Sowing Operation	3.84 ha/h @ $15.68/h	4	
Fertilisers			
Super + Cu + Mo + Zn (10)	200 kg/ha @ $575/tonne	115	
Muriate of Potash (MOP)	50 kg/ha @ $380/tonne	19	
2 applications (pre-planting)	7.2 ha/h @ $14.53/h	4	
Weed Control			
Treflan (pre sowing)	2 L/ha @ $8.50/L	17	
Basagran (post sowing)	2 L/ha @ $30.00/L	60	
2 application	9.36 ha/h @ $15.78/h	3	
Harvesting			
Mow/Condition	0.84 ha/h @ $21.00/h	25	
Round Baling	0.58 ha/h @ $21.25/h	37	
Wrapping	4 bale/t @ $1.33/bale	37	
B. TOTAL VARIABLE COSTS		**428**	
C. GROSS MARGIN PER HECTARE (A-B)		**786**	

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

Price	Yield (tonnes per hectare)					
($/t)	4.0	5.0	6.0	7.0	8.0	9.0
130	132	257	381	506	631	755
140	172	307	441	576	711	845
150	212	357	501	646	791	935
160	252	407	561	716	871	1025
170	292	457	621	**786**	951	1115
180	332	533	713	893	1073	1253
190	372	557	741	926	1111	1295
220	492	707	921	1136	1351	1565

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $170/tonne = 2.23 t/ha
Breakeven Price at a yield of 7 t/ha = $57.71/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

ENTERPRISE NAME: Dry Season Irrigated Peanuts — REGION: Katherine/Daly
ENTERPRISE UNIT: 1 hectare — DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	4.00 t/ha @ $750/tonne	3000	
Other Income			
Fertiliser Subsidy	850 kg @ $95/tonne	81	
Haymaking	4 t/ha @ $150/tonne	600	
A. TOTAL INCOME		**3681**	
VARIABLE COSTS			
Land Preparation			
2 Disc Ploughing	4.48 ha/h @ $29.72/h	7	
1 Chisel Ploughing	4.48 ha/h @ $29.76/h	7	
1 Scarifier Harrowing	4.48 ha/h @ $31.07/h	7	
Sowing			
Seed	100 kg/ha @ $3.50/kg	350	
Sowing Operation	4.20 ha/h @ $16.00/h	4	
Inoculant	100 kg/ha @ $0.05/kg	5	
Fertilisers			
Super Potash 3+1	300 kg/ha @ $497/tonne	149	
Gypsum	500 kg/ha @ $190/tonne	95	
NPK +S +Zn	50 kg/ha @ $730/tonne	37	
K-Komplex	4 L/h @ $5.30/L	42	
4 applications	7.20 ha/h @ $14.53/h	8	
Weed Control			
Pre-emergent			
Treflan	2 L/ha @ $8.50/L	17	
Post-emergent			
Blazer	2 L/ha @ $29.00/L	58	
Fusilade	1 L/ha @ $63.00/L	63	
2 application	9.36 ha/h @ $15.78/h	3	
Inter-row cultivation/Hilling x 2	2.94 ha/h @ $31.07/h	21	
Insect Control			
Endosulfan	2.10 L/ha @ $13.50/L	28	
Lannate	2.00 L/ha @ $14.40/L	29	
2 applications	9.36 ha/h @ $15.78/h	3	
Irrigation	7.00 mgl/ha @ $56.00/mgl	392	
Harvesting			
Cutting/digging	1.00 ha/h @ $25.00/h	25	
Threshing (peanuts)	1.00 ha/h @ $60.00/h	60	
Haymaking	$150/ha	150	
Marketing			
Cartage to Kingaroy (Qld)	4 t/ha @ $90.00/t	360	
B. TOTAL VARIABLE COSTS		**1920**	
C. GROSS MARGIN PER HECTARE (A-B)		**1761**	

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

Price	Yield (tonnes per hectare)				
($/t)	3	4	4.5	5	6.5
600	651	1161	1416	1671	2436
650	801	1361	1641	1921	2761
750	1101	**1761**	2091	2421	3411
800	1251	1961	2316	2671	3736
850	1401	2161	2541	2921	4061

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $750/tonne = 1.34 t/ha
Breakeven Price at a yield of 4.00 t/ha = $459.84/tonne

Aflatoxin Penalty rates

Segregation 1	0-8 ppb	Nil
Segregation 2	9-80 ppb	$100
Segregation 3	81-160ppb	$200
Segregation 4	> 160 ppb	$300-$400

GROSS MARGIN BUDGET

ENTERPRISE NAME: Wet Season Irrigated Peanuts
ENTERPRISE UNIT: 1 hectare

REGION: Katherine/Daly
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	5 t/ha @ $750/tonne	3750	
Other Income			
-Fertiliser Subsidy	850 kg @ $95/tonne	81	
-Haymaking	5 t/ha @ $150/tonne	750	
A. TOTAL INCOME		4581	
VARIABLE COSTS			
Land Preparation			
2 Disc Ploughing	4.48 ha/h @ $29.72/h	7	
1 Chisel Ploughing	4.48 ha/h @ $29.76/h	7	
1 Scarifier Harrowing	4.48 ha/h @ $31.07/h	7	
Sowing			
Seed	100 kg/ha @ $3.50/kg	350	
Sowing Operation	4.20 ha/h @ $16.00/h	4	
Inoculant	100 kg/ha @ $0.05/kg	5	
Fertilisers			
Super Potash 3+1	300 kg/ha @ $497.00/t	149	
Gypsum	500 kg/ha @ $190.00/t	95	
NPK +S +Zn	50 kg/ha @ $730.00/t	37	
K-Komplex	4 L/h @ $5.30/L	42	
4 application	7.20 ha/h @ $14.53/h	8	
Weed Control			
Pre-emergent			
Treflan	2.00 L/ha @ $8.50/L	17	
Post-emergent			
Basagran (broadleaf weed)	2.00 L/h@$30.00/L	60	
Sertin - D C tron	1.00 L/h @ $29.00/L	29	
3 application	9.36 ha/h @ $15.78/h	5	
Inter - Row Cultivation/Hilling x 2	2.94 ha/h @ $31.07/h	21	
Insect Control			
Endosulfan	2.10 L/ha @ $13.50/L	28	
Lannate	2.00 L/h @ $14.40/L	29	
2 applications	9.36 ha/h @ $15.78/t	3	
Diesease Control			
Bravo x 5	2.00 L/ha @$14.50/L	145	
Folicur/Agridex	300.00 ml/ha @ $76.00/L	23	
Agridex	500.00 ml/ha @ $12.60/L	6	
6 applications	9.36 Ha/h @ $15.78/h	10	
Irrigation	3.00 mgl/ha @ $56.00/mgl	168	
Harvesting			
Cutting/digging/air drying	1.00 ha/h @$25.00/h	25	
Treshing (peanuts)	1.00 ha/h @$60.00/h	60	
Haymaking	$150.00/ha	150	
Marketing			
Cartage to Kingaroy (Qld)	5 t/ha @ $90.00/t	450	
B. TOTAL VARIABLE COSTS		**1940**	
C. GROSS MARGIN PER HECTARE (A-B)		**2641**	

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

Price	Yield (tonnes per hectare)				
($/t)	3	4	4.5	5	6.5
600	871	1381	1636	1891	2656
650	1021	1581	1861	2141	2981
750	1321	1981	2311	**2641**	3631
800	1471	2181	2536	2891	3956
850	1621	2381	2761	3141	4281

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $750/tonne = 1.29 t/ha
Breakeven Price at a yield of 5.00 t/ha = $371.86/tonne

Aflatoxin Penalty rates

Segregation 1	0-8 ppb	Nil
Segregation 2	9-80 ppb	$100
Segregation 3	81-160ppb	$200
Segregation 4	> 160 ppb	$300-$400

GROSS MARGIN BUDGET

ENTERPRISE NAME: Rice
ENTERPRISE UNIT: 1 hectare

REGION: Marrakai
DATE: November 1997

		$/ha	Your Estimate
INCOME			
Yield	4.00 t/ha @ $280/tonne	1120	
Other Income			
-Fertiliser Subsidy	300 kg @ $95/tonne	29	
A. TOTAL INCOME		**1149**	
VARIABLE COSTS			
Land Preparation			
1 Disc Ploughing	4.48 ha/h @ $29.72/h	7	
2 Cultivation	6.30 ha/h @ $29.84/h	9	
1 Laser Levelling (assume one third of area levelled per year)	1 ha/h @ $55.00/h	18	
Sowing			
Seed	100 kg/ha @ $0.50/kg	50	
Sowing Operation	3.84 ha/h @ $15.68/h	4	
Fertilisers			
Urea	200 kg/ha @ $530/tonne	106	
Double Super + Zinc	100 kg/ha @ $650/tonne	65	
1 aerial application	1 ha @ $30.00/ha	30	
1 application (with sowing)	3.84 ha/h @ $15.68/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 @ $20.00/ha	20	
Pest Control			
Ammunition (for birds)		10	
Allowance for Insect Control		35	
Harvesting			
Contract Harvester	2.33 ha/h @ $180/h	77	
Marketing			
Freight to Enduser	@ $30/tonne	120	
B. TOTAL VARIABLE COSTS		**674**	
C. GROSS MARGIN PER HECTARE (A-B)		**475**	

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

Price	Yield (tonnes per hectare)				
($/t)	1.0	2.0	3.0	4.0	5.0
240	-315	-105	105	315	525
250	-305	-85	135	355	575
260	-295	-65	165	395	625
270	-285	-45	195	435	675
280	-275	-25	225	**475**	725
290	-265	-5	255	515	775
300	-255	15	285	555	825
320	-235	55	345	635	925

Breakeven Analysis (Gross Margin Breakeven)

Breakeven Yield at a price of $280onne = 2.10/ha
Breakeven Price at a yield of 4 t/ha = $161.34/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.

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	160000	8	51500	8.0	70	4.48
Chisel Ploughing	Chisel Plough	145	160000	8	52000	8.0	70	4.48
Cultivation	Cultivator	145	160000	10	53000	9.0	70	6.30
Harrowing	Harrows	66	76500	12	16000	10.0	70	8.40
Sowing	Combine	66	76500	6	31000	8.0	80	3.84
Sowing	Row Crop Planter	66	76500	6	45000	10.0	70	4.20
Spreading	Spreader	66	76500	10	12500	12.0	60	7.20
Spraying	Boom Spray	66	76500	12	17500	12.0	65	9.36
Harvesting	Header (sorghum)			6	210000	7.0	75	3.15
Harvesting	Header (Maize, Sesame etc)			6	210000	5.0	70	2.10
Harvesting Hay	Mower/Conditioner	66	76500	2.8	35000	4.0	75	0.84
Baling Hay	Baler	66	76500	3.2	36000	3.0	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	0.38	72	20	10000	2400	33	13.90	11.52	4.29	29.72
Chisel Plough	0.38	72	20	10000	2400	33	13.90	11.52	4.33	29.76
Cultivator	0.38	72	20	10000	2400	33	13.90	11.52	4.42	29.84
Harrows	0.38	72	20	10000	2400	15	6.32	5.51	1.33	13.16
Combine Planter	0.38	72	20	10000	2400	18	7.58	5.51	2.58	15.68
Row Crop Planter	0.38	72	20	10000	2400	16	6.74	5.51	3.75	16.00
Spreader	0.38	72	30	10000	1200	14	5.90	5.51	3.13	14.53
Boom Spray	0.38	72	30	10000	1200	14	5.90	5.51	4.38	15.78
Header (sorghum)	0.38	72	50	10000	1800	44	18.54	-	58.33	76.87
Header (maize, sesame etc)	0.38	72	50	10000	1800	44	18.54	-	58.33	76.87
Mower/Conditioner	0.38	72	30	10000	1200	16	6.74	5.51	8.75	21.00
Baler	0.38	72	30	10000	1200	16	6.74	5.51	9.00	21.25
	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)	$380/t
Urea	$530/t
Superphosphate	$426/t
Double Superphosphate	$590/t
Double Super + Zinc	$650/t
Super + Cu + Mo + Zn (10)	$575/t
NPKS (19-10-0-13)	$650/t
NPKS (19-13-0-9)	$680/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
Herbicide	
Treflan	$8.50/L
Atrazine	$6.00/L
Dual	$23.00/L
Roundup CT	$9.00/L
Basagran	$30.00/L
Saturn	$15.00/L
Propanil	$11.00/L
Inoculant	$0.05/kg
Spinnaker	$94.00/L
Sertin-D C torn	$29.00/L
Blazer	$29.00/L
Fusilade	$63.00/L
Insecticide	
Bravo	$14.50/L
Thiodan	$9.15/L
Endosuflfan	$13.50/L
Folicur/Agridex	$76.00/L
Arial Spraying	$20.00/ha
Lannate	$288/20 L
Desiccants	
Reglone	$19.30/L
Seed	
Sorghum	$3.70/kg
Maize (Hycorn 90)	$8.00/kg
Sesame	$1.90/kg
Mung Beans (Putland)	$1.90/kg
Calvacade Hay	$9.00/kg
Rice	$0.50/kg
Peanuts	$3.50/kg
Contracts	
Cleaning & grading	
- Mung Beans	$150.00/t
- Sesame	$150.00/t
Bagging	$25.00/t
Cartage	$30.00/t
Cartage (Katherine)	$30.00/t
Cartage to Kingaroy (Qld)	$90.00/ha
Aerial Spraying	$30.00/ha
Harvesting	$180.00/h
Handling Charges	$60.00/t

Other	
Bale wrap	$1.33/bale
Fertiliser subsidy	$95.00/t
Diesel fuel	75 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	$275/t
Maize	$280/t
Sesame	$1,200/t
Cavalcade Hay	$170/t
Rice	$280/t
Peanuts	$750/t
Peanuts Hay	$150/t
Expected Yield	
Mung Beans	1.00 t/ha
Mung Beans - Splits	20%
Sorghum	2.70 t/ha
Maize	3.00 t/ha
Sesame	0.60 t/ha
Cavalcade Hay	7.00 t/ha
Rice	4.00 t/ha
Peanuts (dryland)	$2.75 t/ha
Peanuts (wet season, irrigated)	5.00 t/ha
Peanuts (dry season, irrigated)	4.00 t/ha
Miscellaneous	
Agistment	$2.00/hd/week and 1 AE/ha
Irrigation	$56.00/mgl
Haymaking	$150.00/ha
Wetting Agent	
Agridex	$63.00/5 L

Appendix D:

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