

# final report

Animal Production

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## Economic evaluation of hormonal growth promotants (HGPs)

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NSW DEPARTMENT OF  
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### **Abstract**

The usage of Hormonal Growth Promotants (HGPs) is estimated to have contributed a total of \$210m to the Australian beef industry in 2006/07. The gains from an estimated two million treatments made in the feedlot sector were calculated to provide an estimated increase in value of production of \$80m. The balance of the HGP treatments (4.56m doses) used under grazing conditions were estimated to produce an additional value of \$130m. As discussed in the report, additional value can occur because carrying capacities can be higher when HGPs are used. In the case of feedlots, feed costs can be lower per unit of beef production and in some cases use of HGPs can produce sufficient growth that cattle reach the necessary weights by the age limit to get into the higher priced markets. The cost to industry associated with reduced meat eating quality via the Meat Standards Australia grading scheme was estimated at \$5.7m. In 2007/08 year HGP usage declined to an estimated 6.2m doses but this was almost entirely due to the lower feedlot capacity that was in operation at that time. It is expected that in the future HGP usage will again attain and most probably exceed the 2006/07 levels.

### Executive summary

HGPs are used widely in the Australian beef cattle industry with an estimated 4.56 million doses used on farm in grazing situations and a further 2 million doses used in the feedlot industry in 2006/07. Different methodologies were used to evaluate the gains in feedlot and the grazing sector. The grazing sector used a software called Beef-N-Omics to calculate the increases in gross margin performance because it required a program that enabled estimation of the changes in carrying capacity if HGPs were used. This occurs because HGP treated cattle grow faster and therefore in certain situations are turned off earlier, leaving more feed for the breeding herd at critical times of the year. The feedlot sector was evaluated with the use of a spreadsheet model which allowed the user to adjust the feed conversion ratio depending on the animals finished.

As the vast majority of HGP usage in the grazing sectors occurs in Northern Australia, four different enterprises, Japanese ox, bullock, feeder steer and live cattle export were evaluated for a with and without scenario by making estimates of likely turn off weights and ages for each enterprise. The improvement in gross margin from using the HGPs was calculated and divided by the number of doses to get an average improvement per dose. Calculated prices based on May 2008 prices ranged from \$14 per dose in the case of Japanese bullock production to \$51 per dose for feeder steer production. At an estimated average return of \$29 per dose the industry benefits are \$130m

The feedlot industry was split into three different sectors with estimated proportion of total feedlot numbers in brackets:

- short fed domestic, (39%)
- short fed export (49%) and
- long fed export (12%)

In this case there were two non-HGP scenarios tested for each feedlot sector. One analysis bought the cattle at a similar weight and took longer to finish them and the other analysis bought cattle at heavier weights and took the same time to finish them. In all cases feeding for longer was the better option and taken as the base or control for comparisons with the HGP treatments. Additional gross margin returns were calculated to be \$23 for short fed domestic, \$49 for short fed export and \$64 for long fed export. A total of 2m doses were assumed to be used in the feedlot industry prior to the downturn in feedlot capacity in 2007/08 and weighted with the proportions above, the total benefits to the feedlot sector are \$80m.

The total benefits are estimated to be \$130m when both sectors are combined.

HGPs reduce meat tenderness and the cost of this was estimated based on the cost of extra chilling time or from the loss of premium available via the Meat Standards Australia grading scheme. The cost to the beef industry from reduced meat quality of 551,831 HGP treated animals in 2007 was estimated to be \$5.7m. The cost to processors was estimated to be \$4.2m and to producers \$1.5m.

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# 1 Introduction

Meat and Livestock Australia (MLA) has requested an assessment of the value of hormonal growth promotants (HGPs) to the beef industry. They are used widely in both the feedlot industry and the grazing (grass fed) industry to increase beef cattle growth rates. In grazing, the economic gain from using HGPs comes from the following sources:

1. Higher growth rates per day
2. Higher stocking rates can be possible where cattle reach market weight before a seasonal feed production is limiting.
3. Higher prices are possible if growth rates can be boosted to target premium markets

In feedlots economic gains are mainly from:

1. Greater throughput because the time taken to achieve target weights is quicker
2. Higher feed conversion efficiency.

There are some premium markets for example the EU and some Japanese markets which specifically ban HGPs and in these situations beef producers or feed lotters calculate if the gain from additional meat produced outweighs the price discounts.

This report evaluates the feedlot and grazing sectors by estimating the per hectare or per head returns of typical enterprises using HGPs compared to returns where no HGPs have been used. The feedlot sector was divided into three major enterprises based on target market (domestic, short fed export and long fed export ) and the grazing sector into four enterprise types (bullock production, Japanese Ox, feeder steers, and live cattle).

## 2 Estimated usage of HGPs

Industry sources estimate the usage of HGP's in the year ended June 30th 2008 to be 6.21m doses. This figure is lower than the 6.56m doses used in 2006-07 because of the decline in the numbers of cattle finished in feedlots. The industry sources are anticipated to be quite accurate because they are based on an audit all but one of the suppliers of HGP products. The numbers supplied of the remaining company have been estimated and added to the audited amount.

### 2.1 Estimated usage of HGPs in feedlots

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Australian Lot Feeders Association data show (Table 1) that the number of animals turned off in feedlots was 2.4 million in 2007 but down from 2.6 million in 2005 and 2006. It is assumed that following the drought feed grain prices will decline from the high levels of 2007 and prices for feedlot finished beef will improve to return acceptable margins and that the existing infrastructure will be once again used to the levels experienced in 2005 and 2006. It is also assumed that 95% of feedlot cattle come from accredited feedlots and 80% of cattle in feedlots are treated with HGPs<sup>1</sup>.

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<sup>1</sup> Source: Des Rinehart, Project Manager Feedlots, MLA

**Table 1 - Numbers of cattle off feed from accredited feedlots by State 2005 to 2007**

<i>Total Turnoff (year ending)</i>	<b>NSW</b>	<b>VIC</b>	<b>QLD</b>	<b>SA</b>	<b>WA</b>	<b>Total</b>
Dec-05	755,550	220,123	1,494,793	54,673	131,161	<b>2,609,194</b>
Dec-06	702,085	208,248	1,495,867	70,054	149,847	<b>2,626,101</b>
Dec-07	717,243	197,930	1,261,965	79,036	148,021	<b>2,404,195</b>

Source: ALFA/MLA Feedlot survey.

## **2.2 Estimated HGP use in the grazing industry**

Using the above assumptions the total number of HGP treatments in feedlots is estimated to be  $2.6\text{m} \times 0.95 \times 0.8 = 2$  million treatments. The total sales of all HGP treatments in Australia in 2006/07 was reported at 6.56 million so it is concluded the balance of 4.56m doses were used by the grazing sector.

## **3 The beef feedlot industry**

### **3.1 Methodology used to evaluate HGP benefits to the feedlot industry**

A spreadsheet model was used to calculate gross margins from a feedlot targeting three different markets. Three scenarios were tested for each market and respective weight gains were based on data from various feed lot experiments completed over time.<sup>23</sup> The treatment scenarios were:

1. Using HGPs to reduce days on feed
2. No HGP, buy at same weights as above and take longer to finish
3. No HGP, Buy at heavier weights so they ready for market at the same time.

Assumptions for each of these markets are shown in Table 2

<sup>2</sup> A limitation of many experiments, however, is that they examined responses from various HGP products and dose rates but often did not include a control of a nil treatment.

<sup>3</sup> For references see technical review of HGPs completed by R. Hunter, B.NBP.0397.

**Table 2 - Base assumptions used to calculate gross margins for lot feeding for three markets**

Scenarios	Domestic market			Short fed export			Long fed export		
	1*	2*	3*	1	2	3	1	2	3
Buy in weight (kg)	320	320	337	425	425	457	420	420	459
Finish weight (kg)	450	450	450	640	640	640	670	670	670
Days on feed	80	92	80	114	131	114	170	195	170
Buy in price (\$/kg)	2.15	2.15	2.15	2.05	2.05	2.05	2.25	2.25	2.25
Sell out price (\$/kg)	2.15	2.15	2.15	2.05	2.05	2.05	2.70	2.70	2.70
Feed intake per day as a % of weight (%)	2.70	2.62	2.62	2.35	2.30	2.30	2.06	2.00	2.00
Death rates (%)	0.7	0.7	0.7	0.7	0.7	0.7	1.1	1.1	1.1
Feed Price (\$/t)	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250
HGP cost (\$/head)	1.8	0	0	1.8	0	0	2.5	0	0
Gross margin (\$/steer)	-2	-25	-31	-19	-68	-84	237	173	149
Difference compared to No HGP, buy at same weight take longer to finish	+23		-6	+49		-16	+64		-24
Selling price required to break even with HGP treatment		2.20 +5¢	2.22 +7¢		2.13 +8¢	2.15 +10¢		2.80 +10¢	2.83+ 13¢

\* see description of treatment scenarios above

Key points from Table 2 are:

- Unless premiums are paid for non HGP treated products, the benefits gained from using HGPs were significant. They varied from \$23 per steer in the short fed domestic market to \$64 per steer in the long fed market.
- Premiums required for gross margins of non-HGP treatments to break even with the HGP treatment varied from 5 to 13 ¢/kg live weight.
- The non-HGP option to buy heavier and finish in the same time produced lower gross margins in all cases than the option to buy at the same weight as the HGP treated animals and take longer to finish them.
- The cost to the feedlot of a longer turnaround has not been factored into these calculations but the interest on the capital invested in the stock is included. If the overhead costs involved in feedlot facility ownership were taken into account it would further support the case for HGP usage because greater throughput can be achieved.
- When feed prices are \$250 per tonne, positive returns rely on a sell out price being higher than the purchase price. Based on our assumptions this occurred in the long fed export market but not in the other markets.

### 3.2 Feedlot turnover

An additional cost that has not been valued in the case of the non-HGP strategy of buying at the same weight and feeding for longer is that the annual feedlot turnover is reduced. As a consequence the overhead costs of running a feedlot are spread over fewer animals and thus overhead costs per animal for this strategy is higher than for the other two strategies. It is impossible to properly value what this difference may be as each feedlot has a different set of overhead costs.

### 3.3 Summation of HGP benefits to the feedlot sector

On the basis of the gross margins reported in Table 2 above and the data in Table 1 the benefit to the feedlot industry of using HGPs is as follows:

**Table 3 - Benefits of HGP usage to Australia**

Number of capsules used:		2,000,000		
Market	%	Additional gross margin	Number of animals that have HGPs per year	Benefit to feedlot sector
Domestic	39%	23	780,000	17,940,000
Short fed export	49%	49	980,000	48,020,000
Long fed export	12%	64	240,000	15,360,000
Total Benefit				<u>81,320,000</u>

### 3.4 Sensitivity of economic results in the feedlot industry

The two key factors driving the economics of feedlotting are:

1. *Buy in and sell out price.* The initial assumptions were that the buy in and sell out prices for the domestic and the short fed export markets were the same at \$2.15 and \$2.05 respectively. For the long fed market the feeder steers were assumed to be bought in for \$2.25/kg live weight (kgLW) and sold at a \$0.45kg/LW premium for \$2.70/kg LW. It was found that varying the selling price had a negligible impact on the difference in returns per head between treatments because relatively both returns moved up or down by virtually the same values.
2. *Feed price.* It is presently difficult in the current world environment to predict what level feed prices will settle at. Recent impacts of droughts, increased world demand for use as bio-fuels and rising energy prices are some of the more significant factors that are currently making the present feed prices volatile. Feed grain prices of \$250 per tonne were set in the initial assumptions and based on the assumptions in Table 2, the only market returning a positive gross margin was the long fed export market. To test the sensitivity of the results to grain prices, prices of \$200, \$300 and \$350 have been used in Table 4.



**Table 4 - Impact of feed prices on the difference in gross margin between HGP treatments and the option of not using HGP but buying at same weight and taking longer to finish**

Feed Price \$/tonne	Domestic	Short fed export	Long fed export
\$200	\$18	\$39	\$52
\$300	\$28	\$58	\$76
\$350	\$33	\$68	\$88

Results from Table 4 clearly show that as feed prices (hence costs) increase the additional feed conversion efficiency achieved by using HGPs increases the difference in gross margin performance. However, as partially demonstrated in Table 2, a positive price differential between buy in price and sell out price is required to return a positive gross margin once feed prices extend beyond \$200 per tonne. Based on the assumptions used in Table 2 the maximum feed price to break even for the HGP treatments for the domestic, short fed export and long fed export was \$224, \$209 and \$327 respectively.

## 4 The grassfed industry

Almost all of the HGP usage that occurs in the grass fed industry is in Northern Australia and as a result the analysis focused on calculations of the benefits that accrued to Northern Australian enterprises that use HGPs.

Benefits can accrue to a grassfed beef enterprise in the following ways

- Animals can be sold at heavier weights at the same age.
- Animals can be sold earlier at similar weights and as a result
  1. Higher priced markets may be achieved.
  2. An earlier turnoff means that mostly there are less non breeding cattle carried into the late winter and spring thus allowing more breeding cattle to be run on the same area

### 4.1 Methodology used in the grass fed industry

Four enterprises were selected as typical of the enterprises that use HGPs. The markets selected were:

- Japanese Ox
- Bullock production
- Feeder steer production
- Live steer export

All of the above enterprises are northern Australian enterprises because the vast majority are used here. But industry sources indicate that HGP usage in Southern Australia is currently increasing.

Assumptions (Table 5) were made about production performance in each of these enterprises where the enterprise was using HGPs compared to estimated production on the same area of land if HGPs were not used.

Software called Beef-N-Omics (Dobos et. al 1997, 2006) was used to calculate the enterprise gross margins based on the assumptions in Table 5. The Beef-N-Omics computer package is designed to help users analyse the effects different management practices have on profitability of

a beef herd. The program integrates feed budgets and financial gross margin budgets for beef cattle breeding herds.

User inputs are required on aspects such as herd size, live weight, calving times, age and weight at turn off, market prices, seasonal pasture growth, and variable costs. The package calculates gross margin per cow, per \$100 capital and per hectare as well as the monthly feed surplus or deficit.

**Table 5 - Weight and turn off age assumed under conditions where HGPs are used compared to non-HGP situations**

**Japanese Ox production**

	With HGP			No HGP		
	Weight kg LW	Age Months	%	Weight kg LW	Age Months	%
Sale Group 1	605	30	100	593	30	80
Sale Group 2				640	40	20

**Feeder steer production (for finishing in feedlots)**

	With HGP			No HGP		
	Weight kg LW	Age Months	%	Weight kg LW	Age Months	%
Sale Group 1	420	27	100	400	29	50
Sale Group 2				550	41	50

**Bullock Production**

	With HGP			No HGP		
	Weight kg LW	Age Months	%	Weight kg LW	Age Months	%
Sale Group 1	540	40	50	530	40	20
Sale Group 2	620	50	50	590	50	80

**Live Cattle Export**

	With HGP			No HGP		
	Weight kg LW	Age Months	%	Weight kg LW	Age Months	%
Sale Group 1	330	18	80	320	18	50
Sale Group 2	350	26	12	340	26	30
Sale Group 3	360	36	8	350	36	20

Adjustments can be made to herd size, monthly pasture growth, months of calving, age and weight of turn off, sale prices, variable costs, cow size, weaning percentage, or other aspects of herd management can be made to assess their impact on feed requirements and herd gross margins. Adjustments to any of those parameters will be reflected in changes in monthly feed requirements and herd gross margin from which principles of beef management can be reinforced. To ensure that feed requirements for the non-HGP and the HGP herds are matched, the process described in Appendix 1 has been used to ensure that feed supply and demand is matched.

Beef-N-Omics is a static herd model which assumes that variables like death rates and culling strategies have been the same as those given in the inputs for a period of time so that the herd has achieved a consistent age structure from one year to the next.

The total annual gross margin was calculated for each enterprise was divided by the number of doses used to achieve the improved growth rates to arrive at a gross margin per dose for each enterprise.

The average return per dose was estimated by examining the returns per dose from each of the four enterprises examined.

## 4.2 Results in grassfed industry

Based on the assumptions in Table 5 the following results were generated (Table 6)

**Table 6: Key results of Beef-N-Omics evaluations on grazing enterprise returns**

	Japanese Ox	Feeder Steer	Japanese Bullock	Live Export
Size of Breeding Enterprise with HGP	1,000	1,000	1,000	1,000
Size without HGPs <sup>4</sup>	981	914	960	947
Total gross margin for HGP treatment excluding HGP costs	387,150	347,408	328,567	224,336
Cost of HGPs <sup>a</sup>	4,088	4,275	4,883	2,858
Gross Margin including HGP cost	383,063	343,133	323,684	220,860
Gross margin without HGP	367,487	308,266	314,195	209,742
Difference in Gross Margin	+15,576	+34,867	+9,489	+10,920
Number of implants given <sup>a</sup>	654	684	800	428
Gross margin gain per implant (dose)	\$24	\$51	\$12	\$26

<sup>a</sup> For details on the implant assumptions see Appendix 2

<sup>4</sup> Breeding cattle numbers are reduced in all cases because steers and surplus heifers are retained for longer periods and as a result, reduce the ability to carry breeders in the late winter/spring period when feed is limiting in Northern Australia.

### 4.3 Price discounts to negate HGP weight gain benefits

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To see what price penalties could be applied to HGP treatments, prices paid for the HGP treated steers were reduced in the four enterprises examined to see what discount would be required for the HGP treatment to break even with the no HGP situation. Discounts required to break even were:

- Japanese Ox 10¢/kgLW
- Feeder steer 27¢/kgLW
- Bullock 7¢/kgLW
- Live steer 15¢/kgLW

### 4.4 Impact of capital invested

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The use of HGPs means that more breeding cattle can be run, and as a consequence more capital is tied up in breeding stock. However, this is almost completely negated by the number of sale animals that are held for longer periods before their value is realised. If a property commences using HGPs the initial cash flow benefit, excluding the cost of the implants, is that more cash is received earlier. However, for the full benefit of HGPs to be recouped, investment in additional breeding cattle will be necessary.

### 4.5 Other benefits of using HGPs

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Alternatively some may argue that they earlier turnoff, without increasing breeder numbers, will reduce grazing pressure and benefit the environment. The value to the environment in this case can be regarded as the opportunity cost of the income foregone by not increasing the stocking rate.

The benefit of HGPs in reducing carbon (methane) emissions is also a factor that will attract more attention in the future.

### 4.6 Total grassfed benefits

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There appears to be a considerable variation in the enterprise performance from HGPs but results will be quite sensitive to the assumptions made. It would be reasonable however, to assume that the benefits from HGP usage range from \$20 to \$40 per dose. Given an estimated 4.56 million doses are used in the grazing industry, benefits from HGP usage to the beef grazing industry are estimated to range from \$91m to \$182m and most likely around \$130m.

## 5 Impacts on meat eating quality

### 5.1 HGPs and Meat Standards Australia (MSA) eating quality

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MSA grading data from January 2007 to the end of October 2007 showed a total of 74% of all Australian cattle that are submitted for MSA grading are currently treated with HGPs. (Table 7) HGP treatments are highest in the states which supply the greatest number of cattle for MSA grading. Queensland supplies 48% of carcasses for grading and over 90% of these cattle are treated with HGPs. NSW and WA supply a little over 20% of the total supply with the NSW proportion of animals treated for HGPs over 82% and in WA, 51%. In other states supply of cattle for MSA grading is limited and the proportion of cattle treated with HGPs is also low.

**Table 7 Proportions of cattle offered for MSA grading being rejected by HGP treatment. For period 1/1/2007 to 1/11/2007**

	HGP Treatment						Total
	Yes			No			
	no.	%	Ungrade %	no.	%	Ungrade %	
NSW	96,608	81.7%	7.7%	21,669	18.3%	7.0%	118,277
QLD	230,032	90.3%	11.7%	24,588	9.7%	21.2%	254,620
SA	1,776	10.3%	5.0%	15,460	89.7%	8.8%	17,236
TAS	0	0.0%	0.0%	5,736	100.0%	5.1%	5,736
VIC	808	16.0%	2.1%	4,234	84.0%	3.2%	5,042
WA	66,183	50.7%	7.9%	64,365	49.3%	7.0%	130,548
Australia	395,407	74.4%	10.0%	136,052	25.6%	9.6%	531,459

Source MSA grade data 1/1/07 to 1/11/07

A comparison of non-compliance figures (ungrade %) show that for the period examined, that 10% of HGP treated cattle were rejected compared to 9.6% of cattle with no HGP treatment (Table 8). However, the variation between states warranted examination of the same period (January to end October) for 2008

**Table 8 Proportions of cattle offered for MSA grading being rejected by HGP treatment. For period 1/1/08 to 30/10/08**

	HGP Treatment						Total
	Yes			No			
	no.	%	ungrade %	no.	%	ungrade %	
NSW	102,364	66.1%	2.3%	52,556	33.9%	11.9%	154,920
QLD	300,172	86.3%	10.8%	47,659	13.7%	18.9%	347,831
SA	2,376	8.5%	14.0%	25,705	91.5%	16.3%	28,081
TAS	0	0.0%	0.0%	34,299	100.0%	9.5%	34,299
VIC	0	0.0%	0.0%	5,823	100.0%	8.5%	5,823
WA	98,448	58.8%	8.9%	69,007	41.2%	11.5%	167,455
Australia	503,360	68.2%	8.7%	235,049	31.8%	13.3%	738,409

Source MSA grade data 1/1/08 to 30/10/08

A comparison of 2007 figures in Table 7 to 2008 figures in Table 8 reveals that non-compliance for non-HGP treated cattle increased from 9.6% to 13.3% and for HGP treated cattle the non-compliance rate fell from 10% to 8.7%. One would expect that over time if management ability of producers using HGP treatments is similar to those producers who are not, that the percentages rejected would be similar because producers will not present cattle unless they think they will be MSA accredited.

Reasons for 2008 differences may be seasonal because the southern Australian regions that have supply more of the HGP free cattle are likely to have had poorer seasonal conditions than suppliers of HGP treated cattle. However, the trend in compliance will need to be monitored in the future because, if as indicated in 2008, there is a higher chance of compliance by using HGPs, there could be an economic incentive that this analysis has been ignored in favour of producers using HGPs.

**5.2 Cost of eating quality effects of HGP treated carcasses**

HGPs impact on meat tenderness (see MLA Final Report B.NBP.0397) as measured by either shear force or trained taste testing panellists. In some cases increased ageing is sufficient to reduce a HGP treated cut to the same standard as a non-HGP treated product of the same specifications. In other cases especially from northern areas of Australia where the *Bos indicus* content is higher, a lower grade may apply certain to HGP cuts than for the non-HGP equivalent.

MSA have a set of tables developed from their data base that determines how long certain cuts of a carcase have to be chilled to achieve a specific eating quality and MSA grade (three four or five star). Based on the assumption that chilling costs an average of 1.94¢/kg per day and that for each increase in grade, there is an improvement in price of \$1.00 per kg, differences in costs were able to be calculated. In order to demonstrate the range of costs, representative carcasses were drawn selected from North Queensland, Central Queensland (2), southern grass, and the domestic feedlots. Characteristics of these typical carcasses are reported in Table 9.

**Table 9 - Carcase characteristics of selected regional cattle supplied to MSA for grading purposes**

	Feedlot	Southern grass	C Qld 320 kg	C Qld bullock	Nth Qld
% Tropical breed	25%	0%	75%	50%	75%
Sex	M	M	M	M	M
Carcase wt (Kg)	240	230	320	360	320
Hung*	AT	AT	AT	AT	AT
Hump	75mm	65mm	100mm	95mm	100mm
Ossification	170	150	280	180	280
MSAmb	300	350	310	320	310
Rib fat	5	6	6	8	6
pH	5.55	5.55	5.55	5.55	5.55
Loin temp (oC)	7	7	7	7	7

\* *Achilles tendon*

In order to calculate the additional costs and the opportunity cost cuts from a carcase of HGP treated animal grading lower, the typical carcasses in Table 9 above were evaluated. It was assumed that all carcase cuts were chilled for the number of days to achieve the maximum grading and were sold at the premium price. In practice however, many cuts are boxed by the processor at the same time and sent in the same consignment. In this situation they would be graded according to the lowest grading present.

The feedlot carcase specified in Table 9 above has grading characteristics specified by MSA that lists the chilling requirement to achieve the maximum grade for both HGP treated and HGP free cattle. These requirements are shown for the five carcase locations specified in Table 9 and in Tables 10-14 respectively. Also shown in Tables 10-14 is the chilling cost for each cut. For example the maximum grade that can be achieved with a tenderloin cut for HGP treated cattle with the characteristics of the feedlot cattle is a grade 4 and this is achieved after 5 days of chilling. Chilling costs for the 3.84<sup>5</sup> kg cut would then be 5 days x 3.84 kg x 1.94¢/kg/day = \$0.37. On the other hand, an HGP free carcase of the specifications described for the feedlot cattle in Table x3 will grade 5 if there are 21 days of chilling applied. The chilling costs for the 21 days is \$1.56 but there is a premium for the HGP free tenderloin because it attained an additional

<sup>5</sup> Weights of cuts are based on Ausmeat brochure *Beef Primal Cuts* at <http://test.ausmeat.com.au/UGAM/linking/beef.pdf> proportions of carcase weight for each cut were tenderloin 1.6%, cube roll 1.7%, striploin 3%, oyster blade 2%, blade 4.5%, rump 4%, outside flat 3.5%, eye round 2.2%.

grade and at \$1/kg premium the additional value of the tenderloin from the HGP free carcase would be \$3.84. Working down the rows, the cube roll also grades higher if they are given 21 days of chilling. The remaining cuts grade the same but in the case of the striploin it takes 21 days for a HGP carcase to achieve a grade 3 compared to only 5 for the HGP free carcase. Chilling differences also occur for the rump. The knuckle, outside flat, eye round and topside do not grade in any circumstances and are thus ignored from the analysis. To achieve maximum grading, the chilling costs of the HGP treated carcase is \$7.80 and \$6.35 for the HGP free carcase. The additional value to the processor of having a HGP free animal of the characteristics described is the total premium for higher gradings of \$7.92 less the chilling cost for the HGP free carcase of \$6.35 plus the saved chilling costs for a HGP carcase of \$7.80 = \$9.37.

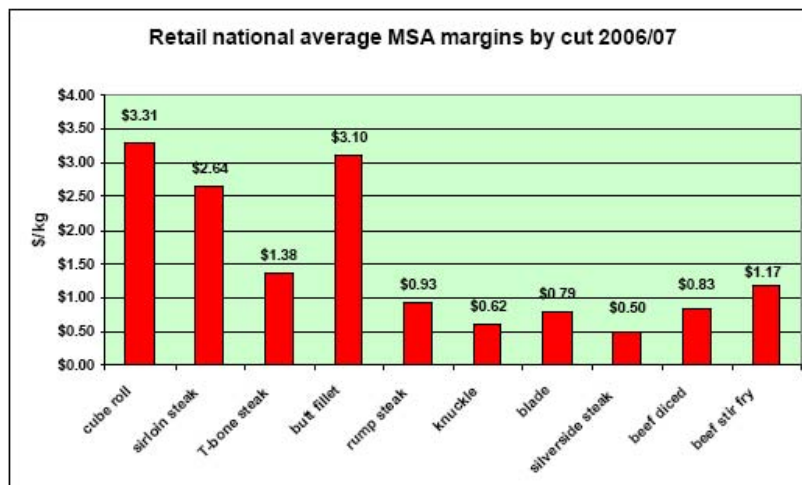
### 5.3 Retail premium for MSA graded product

Figure 1 shows that there is a considerable premium paid for selected graded product ranging from \$3.31/kg nationally for the cube roll down to 50¢/kg for silverside steak. The premiums reported here are the average of the MSA grades that were actually in the shop at the time each survey was made and in some cases 4 and 5 star product would form part of the average. In calculating the retail premiums lost, it has been assumed that when a cut is upgraded from 3 star to 4 star or from 4 star to 5 star that the premium received is \$1.00 per kg. The premium for a 3 star cut compared to an ungraded cut has been determined from Figure 1. The cuts that were sometimes ungraded where HGP's were used but were graded when no HGP's were used were the blade (\$0.79/kg premium), outside flat (part of silverside steak \$0.5/kg) and eye round (part of silverside (\$0.5/kg).

Figure 1 Margin of MSA cuts compared to ungraded cuts 2006/07



#### Retail average prices by cut 2006/07



Retail average MSA margin across all cuts: \$1.52/kg  
 Loin cuts average premium \$2.60/kg  
 Secondary cuts average \$0.78/kg

Source: MLA, National Livestock Reporting Service

**Table 10 - Chilling times to achieve maximum grade, chilling costs and premium received for upgrading to calculate the additional value of a HGP free animal for a feedlot animal with specifications described in Table 9**

Cut	HGP treated				No HGP treatments			Premium for upgrade
	Days/to max grade	Grade	Kg of Cut / carcase	Cost of chilling/ Carcase	Days/to max grade	Grade	Cost of chilling/ cut	
Tenderloin↑	5	4	3.84	0.37	21	5	1.56	3.84
Cube Roll↑	5	3	4.08	0.40	21	4	1.66	4.08
Striploin	14	3	7.2	1.96	5	3	0.70	
Oyster blade	5	3	4.8	0.47	5	3	0.47	
Blade	5	3	10.8	1.05	5	3	1.05	
Rump	14	3	9.6	2.61	5	3	0.93	
Knuckle	0	0	0		-	0		
Outside flat	0	0	0		-	0		
Eye round	0	0	0		-	0		
Topside	0	0	0		-	0		
				\$6.84			\$6.37	7.92

Cost for HGP's @ \$\$1.00/kg markup =	\$7.92	price premium
	-\$6.37	cost of chilling no HGP's
	<u>\$6.84</u>	cost of chilling HGP's
	<u>\$8.39</u>	Extra net return from non HGP treatment



**Table 11 Chilling times to achieve maximum grade, chilling costs and premium received for upgrading to calculate the additional value of a HGP free animal for a southern grassfed animal with specifications described in Table x3**

Cut	HGP treated				No HGP treatments			Premium
	Days/to max grade	MSA star rating	Kg of Cut / carcase	Cost of chilling/ Carcase	Days/to max grade	MSA star rating	Cost of chilling /Cut	
Tenderloin↑	5	4	3.68	0.36	5	5	0.36	3.68
Cube Roll↑	21	4	3.91	1.59	5	4	0.38	
Striploin	5	3	6.9	0.67	21	4	2.81	6.9
Oyster blade	5	3	4.6	0.45	14	4	1.25	4.6
Blade	5	3	10.35	1.00	5	3	1.00	
Rump	14	3	9.2	2.50	5	3	0.89	
Knuckle	0	0	0	0.00	-	0	0.00	
Outside flat	0	0	8.05	0.00	21	3	3.28	4.025
Eye round	35	3	5.06	0.00	14	3	1.37	
Topside	0	0	0	0.00	-	0	0.00	
				\$6.57			\$11.35	19.205

Cost for HGP's @ \$1.00/kg markup =

\$19.21	price premium
-\$11.35	cost of chilling no HGP's
<u>\$6.57</u>	cost of chilling HGP's
<u>\$14.43</u>	Extra net return from non HGP treatment

**Table 12 Chilling times to achieve maximum grade, chilling costs and premium received for upgrading to calculate the additional value of a HGP free animal for a central Queensland 320kg carcass weight animal with specifications described in Table x3**

Cut	HGP treated				No HGP treatments			Premium for upgrade
	Days/to max grade	Grade	Kg of Cut / carcass	Cost of chilling/ Carcass	Days/to max grade	Grade	Cost of chilling/ cut	
Tenderloin	5	4	5.12	0.50	5	4	0.50	
Cube Roll↑	5	3	5.44	0.53	21	4	2.22	5.44
Striploin	14	3	9.6	2.61	5	3	0.93	
Oyster blade	5	3	6.4	0.62	5	3	0.62	
Blade	5	3	14.4	1.40	5	3	1.40	
Rump	14	3	12.8	3.48	5	3	1.24	
Knuckle	0	0	0	0.00	-	0	0.00	
Outside flat	0	0	0	0.00	0	0	0.00	0
Eye round	0	0	0	0.00	0	0	0.00	0
Topside	0	0	0	0.00	-	0	0.00	
				\$9.13			\$6.90	5.44

Cost for HGP's @ \$1.00/kg markup =

\$5.44	price premium
-\$6.90	cost of chilling no HGP's
<u>\$9.13</u>	cost of chilling HGP's
<u>\$7.66</u>	Extra net return from non HGP treatment

**Table 13 Chilling times to achieve maximum grade, chilling costs and premium received for upgrading to calculate the additional value of a HGP free animal for a Central Queensland 360kg carcase weight bullock with specifications described in Table x3**

Cut	HGP treated				No HGP treatments			Premium for upgrade
	Days/to max grade	Grade	Kg of Cut / carcase	Cost of chilling/ Carcase	Days/to max grade	Grade	Cost of chilling/ cut	
Tenderloin	5	4	5.76	0.56	5	4	0.56	
Cube Roll↑	5	3	6.12	0.59	14	4	1.66	6.12
Striploin	14	3	10.8	2.93	5	3	1.05	
Oyster blade	5	3	7.2	0.70	5	3	0.70	
Blade	5	3	16.2	1.57	5	3	1.57	
Rump	14	3	14.4	3.91	5	3	1.40	
Knuckle	0	0	0	0.00	-	0	0.00	
Outside flat	0	0	12.6	0.00	35	3	8.56	6.3
Eye round	0	0	7.92	0.00	35	3	5.38	3.96
Topside	0	0	0	0.00	-	0	0.00	
				\$10.27			\$20.87	16.38

Cost for HGP's @ \$\$1.00/kg markup =	\$16.38	price premium
	-\$20.87	cost of chilling no HGP's
	<u>\$10.27</u>	cost of chilling HGP's
	<u>\$5.78</u>	Extra net return from non HGP treatment

**Table 14 Chilling times to achieve maximum grade, chilling costs and premium received for upgrading to calculate the additional value of a HGP free animal for a North Queensland 320kg carcase weight animal with specifications described in Table x3**

Cut	HGP treated				No HGP treatments			Premium for upgrade
	Days/to max grade	Grade	Kg of Cut / carcase	Cost of chilling/ Carcase	Days/to max grade	Grade	Cost of chilling/ cut	
Tenderloin	5	4	5.12	0.50	5	4	0.50	
Cube Roll	5	3	5.44	0.53	5	3	0.53	
Striploin	21	3	9.6	3.91	14	3	2.61	
Oyster blade	5	3	6.4	0.62	5	3	0.62	
Blade↑	0	0	14.4	0.00	5	3	1.40	11.376
Rump	21	3	12.8	5.21	5	3	1.24	
Knuckle	0	0	0		-	0		
Outside flat	0	0	0		-	0		
Eye round	0	0	0		-	0		
Topside	0	0	0		-	0		
				\$10.77			\$6.89	11.376

Cost for HGP's @ \$1.00/kg markup =	\$11.38	price premium
	-\$6.89	cost of chilling no HGP's
	<u>\$10.77</u>	cost of chilling HGP's
	<u>\$15.26</u>	Extra net return from non HGP treatment

In 2007 there were a total of 502,465 cattle treated with HGP offered for grading. Of these 10.4% were ungraded due to meat colour, fat depth, or pH (Table x9). Many processors choose to discount any cattle that are above boning group 11 and given that application of a HGP causes an automatic 2 point increase in boning groups it follows that any cattle that now fall into boning groups 12 and 13 may not have received a discount had HGPs not been applied<sup>6</sup>. At a price discount of 10 cents/kg carcase weight the loss to producers for the 49,008 carcasses in boning groups 12 and 13 would be \$1.47m.

<sup>6</sup> It is possible however, that in the absence of a HGP treatment ossification or some other factor may have altered the boning group score. Lower growth rates for non HGP animals would tend to increase the boning score for ossification.

**Table 15 Number of HGP cattle graded by boning group 2007/08**

BoningGroup	Count	Percentage	Cumulative percentage
1	16,817	3.3%	3.3%
2	15,354	2.8%	5.8%
3	16,322	3.0%	8.8%
4	8,982	1.6%	10.4%
5	33,643	6.1%	16.5%
6	94,243	17.1%	33.6%
7	58,992	10.7%	44.3%
8	41,660	7.5%	51.8%
9	24,063	4.4%	56.2%
10	63,864	11.6%	67.8%
11	37,636	6.8%	74.6%
12	17,004	3.1%	77.7%
13	32,004	5.8%	83.5%
14	24,659	4.5%	87.9%
15	7,668	1.4%	89.3%
16	1,534	0.3%	89.6%
17	112	0.0%	89.6%
18	17	0.0%	89.6%
Ungraded	57,257	10.4%	100.0%
Total	551,831	100.0%	

#### 5.4 Summary of MSA processor costs

The results from Tables 10 to 14 indicate that the costs from extra chilling or from the loss of premium, ranged over the sample of carcasses examined from \$5.78 to \$15.26 and averaged \$10.30. The carcasses with the most to gain were those where the nil HGP carcasses were graded or upgraded compared to the HGP carcasses. In practice however, it is likely that different cuts will not receive different treatments in terms of chilling to achieve the highest grading possible. For example all meat that makes MSA grade 3 after 5 days of chilling may be packed but if for example the tenderloin could achieve a grade 5 MSA grading after 21 days of chilling it is up to management whether the additional chiller and labelling management in marketing effort is warranted.

Based on the average loss of \$10.30 for the 5 carcasses described above (Tables 10-14) the loss to the processing industry over the whole industry for HGP treated animals in 2007 of 551,831 HGP treated animals is \$5.7m. Processors commonly provide a discount for animals that exceed boning group 11. With HGP treatments adding 2 boning points to any grading this means that any of the HGP treated animals falling in boning groups 12 and 13 would be likely to have made boning group 11 if they had not received the treatment<sup>7</sup>. Assuming an average carcass weight of 300kg and a discount of 10¢/kg, the cost borne by the producer is 49,008 \* \$30 = \$1.5m. Thus the cost borne by the processor is \$4.2m (\$5.7m - \$1.5m).

Processors are in a position to recoup a greater share of the losses by discounting any product that is treated with HGPs. Because they have this option and know the risks and costs involved in downgrading of product, there is no need to recommend any changes to the current system to compensate processors for their share of the losses.

<sup>7</sup> Other factors such increased boning score because of extra ossification may mean a portion of the animals may not have made the grade.

### **6 Total industry benefits**

Total industry benefits of HGP usage for the whole industry are estimated to be around \$130m for the grazing industry and \$80m for the feedlot industry or a total of \$210m.

### **7 Conclusions**

Use of HGP implants plays a significant role in boosting the profitability of the Australian beef industry. This is achieved by increasing weight gains without any discernable price penalties from the target markets. Gains are made in both the grazing industry and the feedlot sectors of the industry. While the report clearly demonstrates that there is considerable economic benefits in using HGPs, usage has been confined predominantly to Northern Australia. Beef producers in Southern Australia who are producing for markets where there are no price penalties or banning of the usage of HGPs should seriously consider their usage as a means of increasing their productivity and returns. There are some premium markets such as the EU market and sectors of the Japanese long fed market that ban HGP treated animals but in general these are relatively small and very specific markets.

## 8 References

Dobos RC, Carberry PJ, Vleeskens S, Sangsari E, Johnston B, Oddy VH (1997) An age and herd structure model for beef breeding enterprises. *Proceedings of the International Congress on Modelling and Simulation*, Hobart, Tasmania, December 1997 pp.1080-1085.

Dobos RC, Carberry PJ, Davies L (2006) Beef-N-Omics: Users manual May 2006. (NSW DPI Orange).

Hunter R.A., HGP use in the Australian Beef Industry. Unpublished report to MLA 2008.

## 9 Appendices

### 9.1 Appendix 1 - example of matching feed supply and demand

Feed balances were determined by entering Northern Australian pasture growth rate figures and estimated if feed was not consumed in one month it was assumed able to be carried over to the next month. In the below example for Japanese Ox production 6,000 Ha was assumed to carry 1,000 breeders treated with HGP with turn off weights as described in Table 5. The assumed monthly pasture growth rates in kg/ha/day from January to December were 20, 20, 15,6,2,1,1,1,2,3,12 and 15 respectively. Feed demand is based on formulae specified by British Ministries of Agriculture, fisheries and Food, (MAFF (1984)) coupled with the monthly model generated livestock numbers specifying the numbers of animals in different feed demand categories (eg. Early lactation vs dry) as well as the progeny growth rates. The latter is calculated from the user specified progeny sale weights and assumes a straight line growth pattern with a weight at calving of 30kg.

The resultant feed balance results is provided in Table A1 below

**Table A1 Feed balance output from Beef-N-Omics for Japanese Ox Production using HGPs**

Feed Balance (kg DM/ha)												
Month:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Feed available:	1085	1291	1281	881	441	190	86	30	183	419	582	790
Total demand:	110	114	118	120	122	111	114	116	106	110	105	110
Balance:	975	1177	1163	761	319	79	-28	-86	77	309	477	680
Total feed deficit:	-114 kg DM/ha ( -114 for ORIGINAL management)											
Number of months of feed deficit:	2 ( 2 for ORIGINAL management)											

The results of Table A1 show significant feed balances in February and March following the summer growing season falling to a deficit in July and August. While a negative figure is impossible the balance figure could be viewed the following way. In reality a certain amount of dry matter per hectare cannot be used for example 300kg/ha. This means that all balance figures should have 300kg/ha added. The negative figures would generally represent a period where there is insufficient feed and the animals are consequently losing weight.

In contrast Table A2 shows the feed balance if 1,000 breeding cows are run using the assumptions for the non HGP scenario for the Japanese Ox enterprise as described in Table 5



**Table A2 Feed budget with 1,000 Breeders producing Japanese Ox without HGPs**

Feed Balance (kg DM/ha)												
Month:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Feed available:	1080	1285	1273	873	435	184	78	30	183	419	583	788
Total demand:	114	118	122	125	127	116	119	121	105	109	110	114
Balance:	966	1167	1151	748	308	68	-41	-91	78	310	473	674
Total feed deficit:	-131 kg DM/ha ( -131 for ORIGINAL management)											
Number of months of feed deficit:	2 ( 2 for ORIGINAL management)											

It can be seen in Table A2 that the deficit is higher because from Table 5 it can be seen that while growth rates are slower, meaning a slightly smaller demand per individual steer, there are more demands because in critical times (Aug, Sep) because 30% more steers are carried over and ultimately sold at heavier weights. Maintenance requirements for heavier animals are also greater. The additional demands of these steers place on the late Winter and Spring feed supply means that that breeding cow numbers had to be adjusted back to 960 breeding cows for the feed budget to align closest with that shown in Table A1.

**9.2 Appendix 2 - Calculation of the number of implants and the costs of implants**

Steers only were assumed to receive implants in each of the four enterprises studied. In practice there are a small proportion of implants given to heifers but it was assumed that in the final calculations of working out gross benefits that female responses were similar to that of steers.

The total number of implants required varies depending on the number of steer weaners produced and the proportions carried through to older ages. The youngest age that steers are ultimately sold is 18 months and the oldest in these case studies is 50 months. It is assumed that at weaning each steer gets a relatively long acting HGP that costs \$7.00 including any labour costs which is extremely minimal because the weaner is given other treatments at this stage. If they are carried through past the 2 year old stage and through to the following dry season, it is assumed they receive a second shorter acting HGP costing \$5.50 including labour and a further dose if they are carried past their 3 year old stage and into the following dry season. Thus total costs for HGP treatments can be \$7.00 for one treatment, \$12.50 for 2 treatments (sold around 30 months of age) and \$18 for 3 treatments (sold around 42+ months of age) Numbers in each category were determined by checking the Beef-N-Omics generated gross margins which were as follows.

**Table A2 1 Number of steers sold from 1000 cow herd, number of implants used and cost of implants**

Sale time (dry season following birth)	Number of implants	Cost of treatment	Japanese Ox	Feeder Steer	Japanese Bullock	Live Export
2 <sup>nd</sup>	1	\$7.00				270
3 <sup>rd</sup>	2	\$12.50	327	342	166	40
4 <sup>th</sup>	3	\$18.00			156	26
	Number of implants		654	684	800	428
	Cost		\$4,088	\$4,275	\$4,883	\$2,858

### **9.3 Output from Feedlot Analysis**

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Tables on following pages.

### OPPORTUNITY LOTFEEDING BUDGET

Enterprise: Domestic HGP

Enterprise Size: 100 steers

steer Mortality: 0.7%

Days on feed: 80 days

INCOME: How sold?  
Live weight or Carcase weight

Cattle Sales

number	class	Live weight	\$/kg Live weight	\$/hd
99	steers	450	2.150	\$967.50

**A. Total Income**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	\$6.50	1	\$650.00
	100	steers	\$4.00	1	\$400.00
	100	steers		1	\$0.00
	100	steers		0	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
100%	Total ration	\$250.00	\$250.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
Total			\$ 250.00

Feed cost	100	steers	\$208.00	per head		\$20,800.00
Labour	100	steers	\$15.00	per tonne fed		\$1,248.00
Interest - steers	100	steers	10%	\$688/hd.	over 80 days	\$1,507.95
Feed	100	steers	10%	\$208/hd.	over 80 days	\$455.89
Transaction levy	100	steers	\$5.00	per head		\$500.00
HGP's	100	steers	\$1.80	per head		\$180.00
Freight	100	steers	\$10.00	per head		\$1,000.00
Commission	100	steers	0.00%	of gross sale value		\$0.00

**B: Total Variable Costs:**

**LESS LANDED COST OF STOCK**

	number	class	Live weight	\$/kg Live weight	\$/hd	
	100	steers	320	\$2.15	\$688.00	\$68,800.00
plus delivery costs						
Freight	100	steers	\$7.00	per head	\$700.00	
Commission	100	steers	0.00%	of gross sale value	\$0.00	
					\$700.00	

**C. Costs including purchase and interest**

<b>GROSS MARGIN (A-B-C)</b>						(\$169.09)
<b>GROSS MARGIN /steer</b>						(\$1.69)
<b>BREAK - EVEN PRICE</b>						
<b>\$/kg</b>				<b>Live weight</b>		\$2.15

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcass weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{130}{80.0}$$

$$= 1.63 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{770}{2}$$

$$= 385 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.70\% \text{ of } 385 \text{ kg}$$

$$= 10.40 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed}$$

$$= 832 \text{ kg/hd}$$

Total feed **83.20** tonnes  
 Feed conversion 6.40 kg feed/kg liveweight

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer
-20%	\$ 1.72	(\$193.84)
-10%	\$ 1.94	(\$97.76)
0%	\$ 2.15	(\$1.69)
10%	\$ 2.37	\$94.38
20%	\$ 2.58	\$190.45

-\$7.71

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Price differential 89.37

Feed prices \$/t	-40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	-120.00	-30.63	58.74	148.11	236.20
\$200	-137.92	-48.55	40.82	130.19	219.56
\$250	-180.43	-91.06	-\$1.69	87.68	177.05
\$300	-222.94	-133.57	-44.20	45.17	134.54

### OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:** Domestic control - no HGP feed longer

**Enterprise Size:** 100 steers

steer Mortality 0.7%

Days on feed 92 days

**INCOME:** How sold?

Live weight  
or Carcase  
weight

**Cattle Sales**

number	class	Live weight	\$/kg Live weight	\$ /hd
99	steers	450	2.150	\$967.50

Budget
(\$)
\$96,072.75
<b>\$96,072.75</b>

**A. Total Income**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	\$6.50	1	\$650.00
	100	steers		1	\$0.00
	100	steers		1	\$0.00
	100	steers		0	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
100%	<b>Total ration</b>	\$250.00	\$250.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
Total		\$ 250.00	

Feed cost	100	steers	\$232.00	per head		\$23,200.00
Labour	100	steers	\$15.00	per tonne		\$1,392.00
Interest - steers	100	steers	10%	\$688/hd.	over 92 days	\$1,734.14
Feed Transaction levy	100	steers	10%	\$232/hd.	over 92 days	\$584.77
HGP's	100	steers	\$5.00	per head		\$500.00
Freight	100	steers	\$0.00	per head		\$0.00
Commission	100	steers	\$10.00	per head		\$1,000.00
			0.00%	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$29,060.90**

**LESS LANDED COST OF STOCK**

	number	class	Sale by? Live weight	\$/kg Live weight	\$ /hd	
	100	steers	320	\$2.15	\$688.00	\$68,800.00
plus delivery costs						
Freight	100	steers	\$7.00	per head		\$700.00
Commission	100	steers	0.00%	of gross sale value		\$0.00
						\$700.00

**C. Costs including purchase and interest**

**\$69,500.00**

**GROSS MARGIN (A-B-C)**

(\$2,488.15)

**GROSS MARGIN /steer**

(\$24.88)

**BREAK - EVEN PRICE**

**\$/kg Live weight**

\$2.21

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcass weights used for sales)**

Dressing percentage of animal at start **56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{130}{92.0}$$

$$= 1.41 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{770}{2}$$

$$= 385 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.62\% \text{ of } 385 \text{ kg} = 10.09 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 928 \text{ kg/hd}$$

$$\text{Total feed} = 92.80 \text{ tonnes}$$

$$\text{Feed conversion} = 7.14 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	
-20%	\$ 1.72	(\$217.03)	
-10%	\$ 1.94	(\$120.95)	
0%	\$ 2.15	(\$24.88)	-98.71
10%	\$ 2.37	\$71.19	
20%	\$ 2.58	\$167.26	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	-7.85	17.52	42.89	68.26	91.99
\$200	-28.05	-2.68	22.69	48.06	73.43
\$250	-75.62	-50.25	-\$24.88	0.49	25.86
\$300	-123.19	-97.82	-72.45	-47.08	-21.71

## OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:** Domestic Control - buy heavy

**Enterprise Size:** 100 steers

steer Mortality 0.7%

Days on feed 80 days

**INCOME:**

How sold?

Live weight  
or Carcase

**Cattle Sales**

number	class	Live weight	\$/kg Live weight	\$/hd
99	steers	450	2.150	\$967.50

**Budget**

**(\$)**

\$96,072.75

**A. Total Income**

**\$96,072.75**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	\$6.50	1	\$650.00
	100	steers		1	\$0.00
	100	steers		1	\$0.00
	100	steers		0	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
100%	<b>Total ration</b>	\$250.00	\$250.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
Total		\$ 250.00	

Feed cost	100	steers	\$206.25	per head		\$20,625.00
Labour	100	steers	\$15.00	per tonne fed		\$1,237.50
Interest - steers	100	steers	10%	\$725/hd.	over 80 days	\$1,588.05
Feed	100	steers	10%	\$206/hd.	over 80 days	\$452.05
Transaction levy	100	steers	\$5.00	per head		\$500.00
HGP's	100	steers	\$0.00	per head		\$0.00
Freight	100	steers	\$10.00	per head		\$1,000.00
Commission	100	steers	0.00%	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$26,052.61**

**LESS LANDED COST OF STOCK**

	number	class	Sale by? Live weight	\$/kg Live weight	\$/hd	
	100	steers	Live weight 337	\$2.15	\$724.55	\$72,455.00
plus delivery costs						
Freight	100	steers	\$7.00	per head	\$700.00	
Commission	100	steers	0.00%	of gross sale value	\$0.00	
						\$700.00

**C. Costs including purchase and interest**

**\$73,155.00**

**GROSS MARGIN (A-B-C)**

**(\$3,134.86)**

**GROSS MARGIN /steer**

**(\$31.35)**

**BREAK - EVEN PRICE**

**\$/kg Live weight**

**\$2.22**



**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcass weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{113}{80.0}$$

$$= 1.41 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{787}{2}$$

$$= 394 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.62\% \text{ of } 394 \text{ kg} = 10.31 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 825 \text{ kg/hd}$$

$$\text{Total feed} = 82.50 \text{ tonnes}$$

$$\text{Feed conversion} = 7.30 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer
<b>-20%</b>	\$ 1.72	(\$223.49)
<b>-10%</b>	\$ 1.94	(\$127.42)
<b>0%</b>	\$ 2.15	(\$31.35)
<b>10%</b>	\$ 2.37	\$64.72
<b>20%</b>	\$ 2.58	\$160.80

-\$143.03

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	-15.37	6.60	28.57	50.54	71.25
\$200	-33.13	-11.16	10.81	32.78	54.75
\$250	-75.29	-53.32	-\$31.35	-9.38	12.59
\$300	-117.44	-95.47	-73.50	-51.53	-29.56

## OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:**

**Short fed HGP**

**Enterprise Size:**

	<b>100</b>	steers
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steer Mortality

	<b>0.7%</b>
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Days on feed

	<b>114</b>	days
--	------------	------

**INCOME:**

How sold?

Live weight  
or Carcase  
weight

**\$/kg  
Live  
weight**

**Cattle Sales**

number	class	\$/kg Live weight	\$ /hd
99	steers	<b>2.050</b>	\$1,312.00

**A. Total Income**

**Budget**

**(\\$)**

\$130,281.60

**\$130,281.60**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	<b>\$6.50</b>	<b>1</b>	\$650.00
	100	steers	<b>\$4.00</b>	<b>1</b>	\$400.00
	100	steers		<b>1</b>	\$0.00
	100	steers		<b>0</b>	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
<b>100%</b>	<b>Total ration</b>	<b>\$250.00</b>	<b>\$250.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
Total			\$ 250.00

Feed cost	100	steers	\$356.75	per head		\$35,675.00
Labour	100	steers	<b>\$15.00</b>	per tonne fed		\$2,140.50
Interest - steers	100	steers	<b>10%</b>	\$871/hd. over 114 days		\$2,721.16
Feed	100	steers	<b>10%</b>	\$357/hd. over 114 days		\$1,114.23
Transaction levy	100	steers	<b>\$5.00</b>	per head		\$500.00
HGP's	100	steers	<b>\$1.80</b>	per head		\$180.00
Freight	100	steers	<b>\$10.00</b>	per head		\$1,000.00
Commission	100	steers	<b>0.00%</b>	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$44,380.90**

**LESS LANDED COST OF STOCK**

	number	class	Sale by? <b>Live weight</b>	\$/kg <b>Live weight</b>	\$ /hd	
	100	steers	<b>425</b>	<b>\$2.05</b>	\$871.25	\$87,125.00
plus delivery costs						
Freight	100	steers	<b>\$7.00</b>	per head		\$700.00
Commission	100	steers	<b>0.00%</b>	of gross sale value		\$0.00
					<b>\$700.00</b>	

**C. Costs including purchase and interest**

**GROSS MARGIN (A-B-C)**

**GROSS MARGIN /steer**

**BREAK - EVEN PRICE**

**\$/kg**

**Live weight**

**\$87,825.00**

(\$1,924.30)

(\$19.24)

**\$2.08**

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcass weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{215}{114.0}$$

$$= 1.89 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1065}{2}$$

$$= 533 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.35\% \text{ of } 533 \text{ kg} = 12.51 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 1427 \text{ kg/hd}$$

$$\text{Total feed} = 142.70 \text{ tonnes}$$

$$\text{Feed conversion} = 6.64 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	
<b>-20%</b>	\$ 1.64	(\$279.81)	
<b>-10%</b>	\$ 1.85	(\$149.52)	
<b>0%</b>	\$ 2.05	(\$19.24)	-61.61
<b>10%</b>	\$ 2.26	\$111.04	
<b>20%</b>	\$ 2.46	\$241.32	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	-40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	1.79	43.89	86.00	128.10	167.08
\$200	-29.87	12.23	54.34	96.44	138.54
\$250	-103.45	-61.35	-\$19.24	22.86	64.97
\$300	-177.03	-134.93	-92.82	-50.72	-8.61

### OPPORTUNITY LOTFEEDING BUDGET

Enterprise: **Short fed control (no HGP- feed longer)**

Enterprise Size: **100** steers

steer Mortality: **0.7%**

Days on feed: **131** days

INCOME: **How sold?**

Live weight  
or Carcase  
weight

**Cattle Sales**

number	class	Live weight	\$/kg Live weight	\$ /hd
99	steers	640	2.050	\$1,312.00

**A. Total Income**

**Budget**

**(\$)**

\$130,281.60

**\$130,281.60**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	\$6.50	1	\$650.00
	100	steers		1	\$0.00
	100	steers		1	\$0.00
	100	steers		0	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
100%	Total ration	\$250.00	\$250.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
0%		\$0.00	\$0.00
Total		\$ 250.00	

Feed cost	100	steers	\$401.00	per head		\$40,100.00
Labour	100	steers	\$15.00	per tonne fed		\$2,406.00
Interest - steers	100	steers	10%	\$871/hd.	over 131 days	\$3,126.95
Feed	100	steers	10%	\$401/hd.	over 131 days	\$1,439.21
Transaction levy	100	steers	\$5.00	per head		\$500.00
HGP's	100	steers	\$0.00	per head		\$0.00
Freight	100	steers	\$10.00	per head		\$1,000.00
Commission	100	steers	0.00%	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$49,222.16**

**LESS LANDED COST OF STOCK**

	number	class	Sale by? Live weight	\$/kg Live weight	\$ /hd
	100	steers	425	\$2.05	\$871.25

plus delivery costs

Freight	100	steers	\$7.00	per head	\$700.00
Commission	100	steers	0.00%	of gross sale value	\$0.00
					\$700.00

**C. Costs including purchase and interest**

**\$87,825.00**

**GROSS MARGIN (A-B-C)**

(\$6,765.56)

**GROSS MARGIN /steer**

(\$67.66)

**BREAK - EVEN PRICE**

**\$/kg Live weight**

\$2.16

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market

value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcase weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{215}{131.0}$$

$$= 1.64 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1065}{2}$$

$$= 533 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.30\% \text{ of } 533 \text{ kg} = 12.25 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 1604 \text{ kg/hd}$$

$$\text{Total feed} = 160.40 \text{ tonnes}$$

$$\text{Feed conversion} = 7.46 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	
<b>-20%</b>	\$ 1.64	(\$328.49)	
<b>-10%</b>	\$ 1.84	(\$198.25)	
<b>0%</b>	\$ 2.05	(\$68.00)	-189.47
<b>10%</b>	\$ 2.25	\$62.25	
<b>20%</b>	\$ 2.46	\$192.49	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	-33.02	9.08	51.19	93.29	131.37
\$200	-69.13	-27.03	15.08	57.18	99.29
\$250	-152.21	-110.10	-\$68.00	-25.90	16.21
\$300	-235.29	-193.18	-151.08	-108.97	-66.87

### OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:** Short fedno HGP - buy heavier

**Enterprise Size:** 100 steers

steer Mortality 0.7%

Days on feed 114 days

**INCOME:** How sold?

Live weight  
or Carcase  
weight

**Cattle Sales**

number	class	<span style="border: 1px solid black; padding: 2px;">Live weight</span>	\$/kg Live weight	\$ /hd
99	steers	<span style="border: 1px solid black; padding: 2px;">640</span>	<span style="border: 1px solid black; padding: 2px;">2.050</span>	\$1,312.00

**A. Total Income**

**Budget**

**(\$)**

\$130,281.60

**\$130,281.60**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	<span style="border: 1px solid black; padding: 2px;">\$6.50</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	\$650.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">0</span>	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
<span style="border: 1px solid black; padding: 2px;">100%</span>	<span style="border: 1px solid black; padding: 2px;">Total ration</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
Total		\$ 250.00	

Feed cost	100	steers	\$359.50	per head		\$35,950.00
Labour	100	steers	<span style="border: 1px solid black; padding: 2px;">\$15.00</span>	per tonne fed		\$2,157.00
Interest - steers	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$937/hd.	over 114 days	\$2,926.05
Feed	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$360/hd.	over 114 days	\$1,122.82
Transaction levy	100	steers	<span style="border: 1px solid black; padding: 2px;">\$5.00</span>	per head		\$500.00
HGP's	100	steers	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	per head		\$0.00
Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$10.00</span>	per head		\$1,000.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$44,305.87**

**LESS LANDED COST OF STOCK**

	number	class	<span style="border: 1px solid black; padding: 2px;">Live weight</span>	\$/kg Live weight	\$ /hd
	100	steers	<span style="border: 1px solid black; padding: 2px;">457</span>	<span style="border: 1px solid black; padding: 2px;">\$2.05</span>	\$936.85
plus delivery costs					
Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$7.00</span>	per head	\$700.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value	\$0.00

\$700.00

**C. Costs including purchase and interest**

**\$94,385.00**

**GROSS MARGIN (A-B-C)**

(\$8,409.27)

**GROSS MARGIN /steer**

(\$84.09)

**BREAK - EVEN PRICE**

**\$/kg Live weight**

\$2.18

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market

value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcase weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{183}{114.0}$$

$$= 1.61 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1097}{2}$$

$$= 549 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.30\% \text{ of } 549 \text{ kg} = 12.62 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 1438 \text{ kg/hd}$$

$$\text{Total feed} = 143.80 \text{ tonnes}$$

$$\text{Feed conversion} = 7.86 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	
<b>-20%</b>	\$ 1.64	(\$344.66)	
<b>-10%</b>	\$ 1.85	(\$214.37)	
<b>0%</b>	\$ 2.05	(\$84.09)	-269.24
<b>10%</b>	\$ 2.26	\$46.19	
<b>20%</b>	\$ 2.46	\$176.47	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	-49.45	-13.75	21.96	57.66	90.22
\$200	-81.36	-45.65	-9.95	25.76	61.46
\$250	-155.50	-119.80	-\$84.09	-48.39	-12.68
\$300	-229.65	-193.94	-158.24	-122.53	-86.83

## OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:**

**Long fed HGP**

**Enterprise Size:**

<b>100</b>	steers
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steer Mortality

<b>1.1%</b>
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Days on feed

<b>170</b>	days
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**INCOME:**

How sold?

Live weight  
or Carcase  
weight

\$/kg nett

**Live  
weight**

\$/hd

**Cattle Sales**

number	class
99	steers

<b>Live weight</b>
<b>670</b>

<b>2.700</b>	\$1,809.00
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**Budget**

(\$)

\$178,910.10

**\$178,910.10**

**A. Total Income**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps		
Medicine, etc	100	steers	<b>\$6.50</b>	<b>1</b>		\$650.00
	100	steers	<b>\$4.00</b>	<b>1</b>		\$400.00
	100	steers		<b>1</b>		\$0.00
	100	steers		<b>0</b>		\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
<b>100%</b>	<b>Total ration</b>	<b>\$250.00</b>	<b>\$250.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
<b>0%</b>		<b>\$0.00</b>	<b>\$0.00</b>
		<b>Total</b>	<b>\$ 250.00</b>

Feed cost	100	steers	\$477.25	per head		\$47,725.00
Labour	100	steers	<b>\$15.00</b>	per tonne		\$2,863.50
Interest - steers	100	steers	<b>10%</b>	\$945/hd.	over 170 days	\$4,401.37
Feed	100	steers	<b>10%</b>	\$477/hd.	over 170 days	\$2,222.81
Transaction levy	100	steers	<b>\$5.00</b>	per head		\$500.00
HGP's	100	steers	<b>\$2.50</b>	per head		\$250.00
Freight	100	steers	<b>\$10.00</b>	per head		\$1,000.00
Commission	100	steers	<b>0.00%</b>	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$60,012.68**

**LESS LANDED COST OF STOCK**

		Sale by?	\$/kg nett			
number	class	Live weight	Live weight	\$/hd		
100	steers	<b>420</b>	<b>\$2.25</b>	\$945.00		\$94,500.00
plus delivery costs						
Freight	100	steers	<b>\$7.00</b>	per head		\$700.00
Commission	100	steers	<b>0.00%</b>	of gross sale value		\$0.00
					\$700.00	

**C. Costs including purchase and interest**

**\$95,200.00**

**GROSS MARGIN (A-B-C)**

\$23,697.42

**GROSS MARGIN /steer**

\$236.97

**BREAK - EVEN PRICE**

\$/kg

Live weight

\$2.34



**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market

value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcase weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{250}{170.0}$$

$$= 1.47 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1090}{2}$$

$$= 545 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.06\% \text{ of } 545 \text{ kg} = 11.23 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 1909 \text{ kg/hd}$$

$$\text{Total feed} = 190.90 \text{ tonnes}$$

$$\text{Feed conversion} = 7.64 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	
<b>-20%</b>	\$ 2.16	(\$120.85)	
<b>-10%</b>	\$ 2.43	\$58.06	
<b>0%</b>	\$ 2.70	\$236.97	\$508.80
<b>10%</b>	\$ 2.97	\$415.88	
<b>20%</b>	\$ 3.24	\$594.79	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	284.22	332.75	381.27	429.80	472.10
\$200	239.82	288.34	336.87	385.40	433.92
\$250	139.92	188.45	\$236.97	285.50	334.03
\$300	40.03	88.55	137.08	185.60	234.13

### OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:** Lonf fed control (no HGP - feed longer)

**Enterprise Size:** 100 steers

steer Mortality 1.1%

Days on feed 195 days

**INCOME:** How sold?

Live weight  
or Carcase  
weight

**Cattle Sales**

number	class	<span style="border: 1px solid black; padding: 2px;">Live weight</span>	\$/kg Live weight	\$ /hd
99	steers	<span style="border: 1px solid black; padding: 2px;">670</span>	<span style="border: 1px solid black; padding: 2px;">2.700</span>	\$1,809.00

**A. Total Income**

**Budget**

**(\$)**

\$178,910.10

**\$178,910.10**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	<span style="border: 1px solid black; padding: 2px;">\$6.50</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	\$650.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">0</span>	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
<span style="border: 1px solid black; padding: 2px;">100%</span>	<span style="border: 1px solid black; padding: 2px;">Total ration</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
Total		\$ 250.00	

Feed cost	100	steers	\$531.50	per head		\$53,150.00
Labour	100	steers	<span style="border: 1px solid black; padding: 2px;">\$15.00</span>	per tonne fed		\$3,189.00
Interest - steers	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$945/hd.	over 195 days	\$5,048.63
Feed	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$532/hd.	over 195 days	\$2,839.52
Transaction levy	100	steers	<span style="border: 1px solid black; padding: 2px;">\$5.00</span>	per head		\$500.00
HGP's	100	steers	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	per head		\$0.00
Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$10.00</span>	per head		\$1,000.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$66,377.15**

**LESS LANDED COST OF STOCK**

	number	class	Sale by? <span style="border: 1px solid black; padding: 2px;">Live weight</span>	\$/kg Live weight	\$ /hd	
	100	steers	<span style="border: 1px solid black; padding: 2px;">420</span>	<span style="border: 1px solid black; padding: 2px;">\$2.25</span>	\$945.00	\$94,500.00
plus delivery costs						
Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$7.00</span>	per head		\$700.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value		\$0.00
						\$700.00

**C. Costs including purchase and interest**

**\$95,200.00**

**GROSS MARGIN (A-B-C)**

\$17,332.95

**GROSS MARGIN /steer**

\$173.33

**BREAK - EVEN PRICE**

**\$/kg Live weight**

\$2.44

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcass weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{250}{195.0}$$

$$= 1.28 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1090}{2}$$

$$= 545 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.00\% \text{ of } 545 \text{ kg} = 10.90 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 2126 \text{ kg/hd}$$

$$\text{Total feed} = 212.60 \text{ tonnes}$$

$$\text{Feed conversion} = 8.50 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	Gross margin \$/year
-20%	\$ 2.16	(\$184.49)	
-10%	\$ 2.43	(\$5.58)	
0%	\$ 2.70	\$173.33	\$324.44
10%	\$ 2.97	\$352.24	
20%	\$ 3.24	\$531.15	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	238.73	287.25	335.78	384.31	424.88
\$200	188.26	236.78	285.31	333.83	382.36
\$250	76.28	124.80	\$173.33	221.86	270.38
\$300	-35.70	12.82	61.35	109.88	158.40

### OPPORTUNITY LOTFEEDING BUDGET

**Enterprise:** Long fed -no HGP, buy heavy

**Enterprise Size:** 100 steers

steer Mortality 1.1%

Days on feed 170 days

**INCOME:** How sold?

Live weight  
or Carcase  
weight

**Cattle Sales**

number	class	<span style="border: 1px solid black; padding: 2px;">Live weight</span>	\$/kg Live weight	\$ /hd
99	steers	<span style="border: 1px solid black; padding: 2px;">670</span>	<span style="border: 1px solid black; padding: 2px;">2.700</span>	\$1,809.00

**A. Total Income**

**Budget**

**(\$)**

\$178,910.10

**\$178,910.10**

**VARIABLE COSTS:**

	number	class	cost (\$/hd)	reps	
Medicine, etc	100	steers	<span style="border: 1px solid black; padding: 2px;">\$6.50</span>	<span style="border: 1px solid black; padding: 2px;">1</span>	\$650.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">1</span>	\$0.00
	100	steers		<span style="border: 1px solid black; padding: 2px;">0</span>	\$0.00

Proportion	Ration Mix	Grain Price (\$/t)	Ration Cost (\$/t)
<span style="border: 1px solid black; padding: 2px;">100%</span>	<span style="border: 1px solid black; padding: 2px;">Total ration</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>	<span style="border: 1px solid black; padding: 2px;">\$250.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
<span style="border: 1px solid black; padding: 2px;">0%</span>		<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>
Total			<span style="border: 1px solid black; padding: 2px;">\$ 250.00</span>

Feed cost	100	steers	\$479.75	per head		\$47,975.00
Labour	100	steers	<span style="border: 1px solid black; padding: 2px;">\$15.00</span>	per tonne fed		\$2,878.50
Interest - steers	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$1,033/hd.	over 170 days	\$4,810.07
Feed	100	steers	<span style="border: 1px solid black; padding: 2px;">10%</span>	\$480/hd.	over 170 days	\$2,234.45
Transaction levy	100	steers	<span style="border: 1px solid black; padding: 2px;">\$5.00</span>	per head		\$500.00
HGP's	100	steers	<span style="border: 1px solid black; padding: 2px;">\$0.00</span>	per head		\$0.00
Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$10.00</span>	per head		\$1,000.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value		\$0.00

**B: Total Variable Costs:**

**\$60,048.02**

**LESS LANDED COST OF STOCK**

	number	class	Sale by?	\$/kg Live weight	\$ /hd
	100	steers	<span style="border: 1px solid black; padding: 2px;">Live weight</span>	<span style="border: 1px solid black; padding: 2px;">459</span>	<span style="border: 1px solid black; padding: 2px;">\$2.25</span>
plus delivery costs					\$1,032.75

\$103,275.00

Freight	100	steers	<span style="border: 1px solid black; padding: 2px;">\$7.00</span>	per head	\$700.00
Commission	100	steers	<span style="border: 1px solid black; padding: 2px;">0.00%</span>	of gross sale value	\$0.00
					\$700.00

**C. Costs including purchase and interest**

**\$103,975.00**

**GROSS MARGIN (A-B-C)**

\$14,887.08

**GROSS MARGIN /steer**

\$148.87

**BREAK - EVEN PRICE**

**\$/kg Live weight**

\$2.48

**Herd Assumptions**

**i) Herd Details**

steers entering the feedlot are bred on farm and are costed into the feedlot at their on farm market

value (ie. Saleyard price less freight, commission, yard dues and transaction levy). This means in effect the budget is working out the marginal gains from feedlotting steers bred on farm.

**ii) Feed Ration**

The example feed ration contains 4% Premix which is comprised of sodium bentonite, urea, salt, limestone, sulphur, and Rumensin.

**iii) Growth Rates and Feed Consumption (if carcase weights used for sales)**

Dressing percentage of animal at start

**56.20%**

$$\text{Live Wt Gain/ day} = \frac{\text{Final Wt} - \text{Starting Wt}}{\text{No. of days on feed}} = \frac{211}{170.0}$$

$$= 1.24 \text{ kg /day}$$

$$\text{Av. Body Wt} = \frac{\text{Final Wt} + \text{Purchase Wt}}{2} = \frac{1129}{2}$$

$$= 565 \text{ kg/hd}$$

$$\text{Feed Intake /day} = 2.00\% \text{ of } 565 \text{ kg} = 11.29 \text{ kg/hd}$$

$$\text{Total Feed Intake} = \text{Feed intake /day} \times \text{No. of days on feed} = 1919 \text{ kg/hd}$$

$$\text{Total feed} = 191.90 \text{ tonnes}$$

$$\text{Feed conversion} = 9.09 \text{ kg feed/kg liveweight}$$

**Effect of sale price on gross margin.**

Change in price	Sale Price ¢/kg Live weight	Gross margin \$/steer	Gross margin \$/year
<b>-20%</b>	\$ 2.16	(\$208.95)	\$319.63
<b>-10%</b>	\$ 2.43	(\$30.04)	
<b>0%</b>	\$ 2.70	\$148.87	
<b>10%</b>	\$ 2.97	\$327.78	
<b>20%</b>	\$ 3.24	\$506.69	

**Effect of feed price and price differential between buy in and sell prices on gross margin**

Feed prices \$/t	40¢/kglw	-20¢/kglw	0¢/kglw	+20¢/kglw	+40¢/kglw
\$180	212.47	253.20	293.93	334.65	369.12
\$200	167.84	208.56	249.29	290.02	330.74
\$250	67.42	108.14	\$148.87	189.60	230.32
\$300	-33.00	7.73	48.45	89.18	129.90

## 9.4 Appendix 4 – Output from grazing analysis

Beef-N-Omics - Gross margins      Date of report: 9/09/2008

Japanese Ox with HGP

### SUMMARY

	Enterprise Breeding	Total
Capital invested in livestock	\$1,026,518.40	\$1,026,518.40
Income	\$468,030.00	\$468,030.00
Variable Costs	\$45,680.22	\$45,680.22
Stock Purchases	\$35,200.00	\$35,200.00

### INCOME

Beef Breeding Enterprise Sales:

Age Sex(months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M      30	327	980	320,948	68.6
F      12	164	406	66,508	14.2
F      24	18	624	11,349	2.4
Bulls	7.5	1,040	7,800	1.7
CFA Cows	85	585	49,725	10.6
Dry Cows	0	585	0	0.0
Other Culls	20	585	11,700	2.5
Totals:	622		\$1,422,987	

COSTS: Japanese Ox with HGP

Variable Costs:

Stock Purchases (\$/hd)	Number	Price (\$)	Cost
Bulls	8.8	4,000.00	35,200.00
Replacements	0	0.00	0.00
<b>Totals:</b>	<b>8.8</b>		<b>\$35,200.00</b>

Enterprise

	Breeding	Trading	
Livestock Purchasing Costs (incl. fees, cartage etc)		0.00	0.00
Health costs	338,248.12	0.00	
Other costs	0.00	0.00	
Feed costs:			
Fodder crops	0.00	0.00	
Hay & Grain	0.00	0.00	
Pasture maintenance	0.00	0.00	
Livestock Selling Costs incl. fees, cartage etc)	12,432.09	0.00	
<b>Totals:</b>	<b>\$45,680.22</b>	<b>\$0.00</b>	

GROSS MARGIN

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$387,149.78	\$0.00	\$387,149.78
- per cow	\$387.15	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$37.71	\$0.00	\$37.17
- per ha	*	*	\$64.52

Beef-N-Omics - Gross margins      Date of report: 9/09/2008

Japanese Ox without HGP

SUMMARY

	Enterprise	
	Breeding	Total
Capital invested in livestock	\$988,713.87	\$988,713.87
Income	\$446,898.00	\$446,898.00
Variable Costs	\$44,610.40	\$44,610.40
Stock Purchases	\$34,800.00	\$34,800.00

INCOME

Beef Breeding Enterprise Sales:

Sex	Age (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	30	257	961	246,890	55.3
M	40	54	1,037	55,677	12.5
F	12	161	406	65,247	14.6
F	24	18	624	11,133	2.5
Bulls		7.4	1,040	7,696	1.7
CFA Cows		83	585	48,555	10.9
Dry Cows		0	585	0	0.0
Other Culls		20	585	11,700	2.6
Totals:		600		\$446,898	



COSTS Japanese Ox without HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	8.7	4,000.00	34,800.00
Replacements	0	0.00	0.00
Totals:	8.7		34,800.00
		Breeding	Enterprise Trading
Livestock Purchasing Costs (incl. fees, cartage etc)			0.00 0.00
Health costs		32,616.76	0.00
Other costs		0.00	0.00
Feed costs:			
Fodder crops		0.00	0.00
Hay & Grain		0.00	0.00
Pasture maintenance		0.00	0.00
Livestock Selling Costs (incl. fees, cartage etc)		11,993.64	0.00
Totals:		\$44,610.40	\$0.00

GROSS MARGINS

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$367,487.60	\$0.00	\$367,487.60
- per cow	\$374.61	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$37.17	\$0.00	\$37.17
- per ha	*	*	\$61.25

Beef-N-Omics - Gross margins      Date of report: 28/08/2008

Feeder steers with HGPs

SUMMARY

	Enterprise Breeding	Total
Capital invested in livestock	\$989,359.28	\$989,359.28
Income	\$438,667.00	\$438,667.00
Variable Costs	\$57,658.95	\$57,658.95
Stock Purchases	\$33,600.00	\$33,600.00

INCOME

Beef Breeding Enterprise Sales:

Sex	Age (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	27	342	735	251,646	57.4
F	19	37	468	17,099	4.3
F	31	18	648	11,582	2.9
Bulls		7.5	910	6,825	1.6
CFA Cows		16	585	9,360	2.1
Dry Cows		193	585	112,905	25.7
Other Culls		50	585	29,250	6.7
Totals:		663		\$399,842	

COSTS Feeder steers with HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	8.4	4,000.00	33,600.00
Replacements	0	0.00	0.00
Totals:	8.4		\$33,600.00

Enterprise

	Breeding	Trading	
Livestock Purchasing Costs (incl. fees, cartage etc)		0.00	0.00
Health costs	36,439.20	0.00	
Other costs	0.00	0.00	
Feed costs:			
Fodder crops	0.00	0.00	
Hay & Grain	0.00	0.00	
Pasture maintenance	0.00	0.00	
Livestock Selling Costs (incl. fees, cartage etc)	21,219.75	0.00	
Totals:	\$57,658.95	\$0.00	

GROSS MARGINS

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$347,408.05	\$0.00	\$308,583.05
- per cow	\$347.41	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$35.11	\$0.00	\$32.23
- per ha	*	*	\$69.48

Beef-N-Omics - Gross margins      Date of report: 28/08/2008

Feeder steers without HGP

SUMMARY

	Enterprise	
	Breeding	Total
Capital invested in livestock	\$972,425.40	\$972,425.40
Income	\$398,469.00	\$398,469.00
Variable Costs	\$59,402.34	\$59,402.34
Stock Purchases	\$30,800.00	\$30,800.00

INCOME

Beef Breeding Enterprise Sales:

Sex	Age (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	29	155	700	108,267	27.2
M	41	146	832	121,068	30.4
F	19	33	468	15,534	3.9
F	31	16	648	10,522	2.6
Bulls	6.8		910	6,188	1.6
CFA Cows	14		585	8,190	2.1
Dry Cows	175		585	102,375	25.7
Other Culls	45		585	26,325	6.6
Totals:		591		\$398,469	

COSTS Feeder steers without HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	7.7	4,000.00	30,800.00
Replacements	0	0.00	0.00
Totals:	7.7		\$30,800.00

	Enterprise	
	Breeding	Trading
Livestock Purchasing Costs (incl. fees, cartage etc)		0.00 0.00
Health costs	33,087.39	0.00
Other costs	7,402.51	0.00
Feed costs:		
Fodder crops	0.00	0.00
Hay & Grain	0.00	0.00
Pasture maintenance	0.00	0.00
Livestock Selling Costs (incl. fees, cartage etc)	18,912.44	0.00
Totals:	\$59,402.34	\$0.00

GROSS MARGINS

Gross margin	Enterprise		
	Breeding	Trading	Total
- Total	\$308,266.66	\$0.00	\$308,266.66
- per cow	\$339.50	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$31.70	\$0.00	\$31.70
- per ha	*	*	\$61.65

Beef-N-Omics - Gross margins

Bullock Production with HGP

SUMMARY

Capital invested in livestock	\$1,112,121.80
Income	\$449,986.50
Variable Costs (excl bulls)	\$87,019.81
Stock Purchases	\$34,400.00

INCOME

Beef Breeding Enterprise Sales:

	Age Sex (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	40	166	853	141,355	31.4
M	50	156	980	152,952	34.0
F	30	100	428	43,047	9.6
F	42	40	540	21,403	4.8
F	54	3	540	1,627	0.4
Bulls		7.5	715	5,363	1.2
CFA Cows			58	540	31,320 7.0
Dry Cows		78	540	42,120	9.4
Other Culls		20	540	10,800	2.4
Totals:		629		\$449,987	

COSTS : Bullock Production with HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	8.6	4,000.00	34,400.00
Replacements	0	0.00	0.00
Totals:	8.6		\$34,400.00

Livestock Purchasing Costs (incl. fees etc)	0.00
Health costs	59,061.26
Other costs	0.00

Feedcosts:

Fodder crops	0.00
Hay & Grain	0.00
Pasture maintenance	0.00
Livestock Selling Costs	27,958.55

Totals:	\$87,019.81
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GROSS MARGINS

	Breeding	Total
Gross margin		
- Total	\$328,566.69	\$328,566.69
- per cow	\$328.57	*
- per \$100capital	\$29.54	\$29.54
- per ha	*	\$65.71

Beef-N-Omics - Gross margins

Bullock production without HGP

	Breeding	Total
Capital invested in livestock	\$1,105,097.50	\$1,105,097.50
Income	\$431,543.00	\$431,543.00
Variable Costs	\$84,147.63	\$84,147.63
Stock Purchases	\$33,200.00	\$33,200.00

INCOME

Beef Breeding Enterprise Sales:

Sex	Age (mths)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	40	64	837	53,275	12.3
M	50	245	932	228,688	53.0
F	30	96	428	41,325	9.6
F	42	38	540	20,546	4.8
F	54	3	540	1,561	0.4
Bulls		7.2	715	5,148	1.2
CFA Cows		56	540	30,240	7.0
Dry Cows		75	540	40,500	9.4
Other Culls		19	540	10,260	2.4
Totals:		603		\$431,543	



COSTS: Bullock production without HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	8.3	4,000.00	33,200.00
Replacements	0	0.00	0.00
<b>Totals:</b>	<b>8.3</b>		<b>\$33,200.00</b>

	Enterprise	
	Breeding	Trading
Livestock Purchasing Costs (incl. fees, cartage etc)	0.00	0.00
Health costs	57,325.34	0.00
Other costs	0.00	0.00
<b>Feed costs:</b>		
Fodder crops	0.00	0.00
Hay & Grain	0.00	0.00
Pasture maintenance	0.00	0.00
Livestock Selling Costs (incl. fees, cartage etc)	26,822.29	0.00
<b>Totals:</b>	<b>\$84,147.63</b>	<b>\$0.00</b>

GROSS MARGINS

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$314,195.37	\$0.00	\$314,195.37
- per cow	\$327.29	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$28.43	\$0.00	\$28.43
- per ha	*	*	\$62.84

Beef-N-Omics - Gross margins      Date of report: 28/08/2008

Live export with HGP

	Breeding	Total
Capital invested in livestock	\$792,352.97	\$792,352.97
Income	\$350,723.50	\$350,723.50
Variable Costs	\$99,423.44	\$99,423.44
Stock Purchases		\$33,200.00

INCOME

Beef Breeding Enterprise Sales:

Sex	Age (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	18	270	545	146,946	41.9
M	26	40	578	23,120	9.4
M	36	27	594	16,038	4.5
F	30	174	558	96,912	27.1
Bulls		7.5	715	5,363	1.5
CFA Cows	77	540	41,580	11.6	
Dry Cows		0	540	0	0.0
Other Culls		50	540	27,000	7.6
Totals:		635		\$356,959	

COSTS: Live export with HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	8.3	4,000.00	33,200.00
Replacements	0	0.00	0.00
<b>Totals:</b>	<b>8.3</b>		<b>\$33,200.00</b>

	Enterprise	
	Breeding	Trading
Livestock Purchasing Costs (incl. fees, cartage etc)	0.00	0.00
Health costs	62,826.41	0.00
Other costs	0.00	0.00
<b>Feed costs:</b>		
Fodder crops	0.00	0.00
Hay & Grain	0.00	0.00
Pasture maintenance	0.00	0.00
Livestock Selling Costs (incl. fees, cartage etc)	36,597.04	0.00
<b>Totals:</b>	<b>\$99,423.44</b>	<b>\$0.00</b>

GROSS MARGINS

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$224,336.00	\$0.00	\$224,336.00
- per cow	\$218.10	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$27.53	\$0.00	\$27.53
- per ha	*	*	\$59.93

Beef-N-Omics - Gross margins Date of report: 28/08/2008

Live export without HGP

## SUMMARY

	Breeding	Enterprise Total	
Capital invested in livestock		\$775,775.20	\$775,775.20
Income	\$329,147.50	\$329,147.50	
Variable Costs	\$94,921.78	\$94,921.78	
Stock Purchases		\$31,600.00	\$31,600.00

## INCOME

Beef Breeding Enterprise Sales:

Sex	Age (months)	Number	Value (\$/hd)	Income (\$)	Proportion (%)
M	18	160	528	84,339	25.1
M	26	124	561	53,856	16.0
M	36	24	578	36,414	10.8
F	30	164	558	91,777	27.3
Bulls		7.1	715	5,077	1.5
CFA Cows		73	540	39,420	11.7
Dry Cows		0	540	0	0.0
Other Culls		47	540	25,380	7.5
Totals:		599		\$336,263	

COSTS Live export without HGP

Variable Costs:

Stock Purchases	Number	Price (\$/hd)	Cost (\$)
Bulls	7.9	4,000.00	31,600.00
Replacements	0	0.00	0.00
Totals:	7.9		\$31,600.00

	Enterprise	
	Breeding	Trading
Livestock Purchasing Costs (incl. fees, cartage etc)	0.00	0.00
Health costs	60,493.35	0.00
Other costs	0.00	0.00
Feed costs:		
Fodder crops	0.00	0.00
Hay & Grain	0.00	0.00
Pasture maintenance	0.00	0.00
Livestock Selling Costs (incl. fees, cartage etc)	34,428.43	0.00
Totals:	\$94,921.78	\$0.00

GROSS MARGINS

	Breeding	Enterprise Trading	Total
Gross margin			
- Total	\$209,742	\$0.00	\$209,742
- per cow	\$221	*	*
- per steer purchased	*	\$0.00	*
- per \$100 capital	\$27	\$0.00	\$27
- per ha	*	*	\$57.89