

Guidelines For Estimating **Backgrounding Costs** For Weight Range of 500 - 900 lbs Based on 500 Head

Date: September, 2009

The following is an estimate of the costs of production associated with backgrounding feeder calves. The purpose of this budget is to assist Manitoba livestock producers to calculate their own costs and take into consideration the factors that should be included when budgeting to determine breakeven prices.

Backgrounding generally refers to the assembling, feeding and managing of calves from weaning until they are put onto a high concentrate finishing ration. In general calves fed from weaning to 800-900 pounds are referred to as background feeders. An example of a typical backgrounding operation would be, feed 500 pound steers to gain 1.75-2.75 pounds per day for approximately 100-200 days to produce 800-900 pound backgrounded feeders.

The assumptions on which costs are calculated are clearly defined in the supporting pages. When interpreting these costs for an individual situation, adjustments may be required. Note that on farm feed costs are based on market prices at the farm. It is assumed that all feed is grown on the farm, except for supplements. Each assumption must be examined and adjustments made where necessary, to apply to the producer's own situation.

Disclaimer: This budget is only a guide and is not intended as an in depth study of the cost of production of the Manitoba cattle industry. Interpretation and utilization of this information is the responsibility of the user. If you require assistance with developing your individual budget, please contact your local MAFRI Business Development Specialist or Livestock Farm Production Extension Specialist.

Backgrounding Feeder Cattle Production Costs

Assumptions

1. This budget outlines the cost of production for backgrounding cattle.
2. Buildings and equipment are valued at new cost.
3. All feed is purchased.

Herd Profile

| | | |
|------------------------------|-----------------|---------|
| Number of Feeders Purchased | 500 | head |
| Feeder Cattle Mortality Rate | 2.00 | % |
| Feeder Purchased Weight | 500 | lbs |
| Feeder Cattle Price | \$115.00 | /cwt |
| Finish Weight | 900 | lbs |
| Feeder Selling Price | \$102.00 | /cwt |
| Percent Shrink finished | 6.00 | % |
| Percent Shrink feeder | 0.00 | % |
| Average Daily Gain | 2.5 | lbs/day |
| Days On Feed | 160 | days |

FOOTNOTE: 1 kilogram (kg) = 2.2046 pounds (lbs)

Feed Costs

| | Market Price | Feeder Cattle Requirement | Days on Feed |
|--------------------------|-------------------------|--------------------------------------|-------------------------|
| Ground Barley | \$3.00 /bu | 6.50 lbs/day | 160 |
| Barley Silage | \$35.00 /ton | 34.00 lbs/day | 160 |
| Hay | \$65.00 /ton | 5.00 lbs/day | 15 |
| Mineral/Rumensin Pre Mix | \$351.00 /tonne | 1.00 lbs/day | 160 |
| Other Feed #1 | \$0.00 | 0.00 lbs/day | |
| Other Feed #2 | \$0.00 | 0.00 lbs/day | |

FOOTNOTE: 1 bushel (bu) barley = 48 lbs = 21.8 kg
 1 kilogram (kg) = 2.2046 pounds (lbs)
 1 tonne (t) = 1,000 kg

Other Operating Costs

Feeder Purchase Costs

| | |
|-------------------|--------------|
| Buying Commission | \$5.00 /head |
| Trucking-in | \$1.60 /cwt |
| Insurance fee | \$1.00 /head |

Straw Bedding

| | |
|---------|--------------|
| lbs/day | 4.00 /head |
| cost | \$25.00 /ton |

Veterinary Medicine & Supplies

Cattle Medication

| | |
|-------------------------------|--------------|
| IBR,BVD,PI3,BRSV, Pasteurella | \$4.80 /head |
| Vitamin A-D | \$0.65 /head |
| External & Internal Parasites | \$1.05 /head |
| Blackleg & Haemophilus | \$2.30 /head |
| Growth Implants | \$1.71 /head |
| Antibiotics | \$6.00 /head |

Herd Health Program

Professional Services

| | |
|--------------------|----------------|
| Total Yearly Hours | 3.00 hours |
| Rate | \$150.00 /hour |

Transportation

| | |
|-------------------------------|------------|
| Total Kilometres (round trip) | 80.0 km |
| Rate | \$0.70 /km |
| Number of Yearly Visits | 2 |

Annual Fuel & Repair Costs

| | |
|---|------------|
| Repairs (Machinery, Equipment & Facilities) | \$1,000.00 |
| Fuel Costs | \$2,000.00 |

Utilities

| | |
|-----------------------|------------|
| Telephone, Hydro etc. | \$2,000.00 |
|-----------------------|------------|

Trucking Cost

| | |
|----------------|-------------|
| Average Weight | 900 /head |
| Trucking Cost | \$1.60 /cwt |

Marketing Cost

| | |
|---------------------|---------------|
| MCEC Fee | \$2.00 /head |
| MCPA Levy | \$3.00 /head |
| Commission on Sales | \$15.50 /head |
| Market Value | \$102.00 /cwt |

Manure Removal

Annual Cost for Removal **\$3,200.00**

Insurance

Cost per \$100 Capital Invested in

a) Livestock **\$0.00** /\$100

b) Building & Equipment **\$0.50** /\$100

Additional Coverage for Liability **\$49.00** /year

Barn & Office Supplies

Total yearly expense relating to barn **\$500.00**

Operating Interest Rate **6.50** %

Investment Interest Rate **4.00** %

FOOTNOTE: cwt = hundred-weight = 100 lbs

Capital Costs

| | <u>Original Value</u> | <u>Salvage Value</u> | <u>Useful Life</u> |
|--|---------------------------|--------------------------|------------------------|
| Buildings, Corrals & Water System | | | |
| Windbreak fence | \$6,300 | 10 % | 20 years |
| Pens | \$5,300 | 10 % | 20 years |
| Handling Facilities | \$5,500 | 10 % | 20 years |
| Waterers | \$5,000 | 10 % | 20 years |
| Gates | \$1,280 | 10 % | 20 years |
| Feeders | \$1,500 | 10 % | 20 years |
| Bunk Feeders | \$18,768 | 10 % | 20 years |
| Well & Pressure System | \$6,000 | 10 % | 20 years |
| Grain Bin | \$3,500 | 10 % | 20 years |
| Landscaping | \$15,000 | 10 % | 20 years |
| Total | \$68,148 | | |
| Machinery & Equipment | | | |
| Tractor & Loader | \$50,000 | 20 % | 10 years |
| Miscellaneous | \$25,000 | 20 % | 10 years |
| Total Investment | \$143,148 | | |

Labour Costs

| | <u>Total</u> |
|-------------|----------------------|
| Hours/Head | 1.0 hours |
| Labour Rate | \$12.50 /hour |

Backgrounding Cattle Production Cost Summary, September, 2009

| A. Operating Costs | <u>Cost/Head</u> | <u>Total Cost</u> | <u>Your Cost</u> |
|---|----------------------|-------------------|------------------|
| 1. Feed Costs | | | |
| 1.01 Ground Barley | \$65.00 | \$32,500 | _____ |
| 1.02 Barley Silage | \$95.00 | \$47,500 | _____ |
| 1.03 Hay | \$2.44 | \$1,220 | _____ |
| 1.04 Supplement | <u>\$25.47</u> | <u>\$12,735</u> | _____ |
| Total Feed Costs | \$187.91 | \$93,955 | _____ |
| 2. Other Operating Costs | | | |
| 2.01 Feeder Cost | \$589.00 | \$294,500 | _____ |
| 2.02 Straw | \$8.00 | \$4,000 | _____ |
| 2.03 Veterinary Medicine & Supplies | \$17.63 | \$8,815 | _____ |
| 2.04 Annual Fuel & Repair Costs | \$6.00 | \$3,000 | _____ |
| 2.05 Utilities | \$4.00 | \$2,000 | _____ |
| 2.06 Feeder Selling Cost | \$34.90 | \$17,450 | _____ |
| 2.07 Insurance | \$1.53 | \$765 | _____ |
| 2.08 Manure Removal | \$6.40 | \$3,200 | _____ |
| 2.09 Barn & Office Supplies | \$1.00 | \$500 | _____ |
| 2.10 Death Loss | <u>\$14.10</u> | <u>\$7,050</u> | _____ |
| Subtotal Operating Costs | \$870.47 | \$435,235 | _____ |
| 2.11 Operating Interest | <u>\$20.79</u> | <u>\$10,395</u> | _____ |
| Total Operating Costs | \$891.26 | \$445,630 | _____ |
| B. Fixed Costs | | | |
| 3. Depreciation | | | |
| 3.01 Buildings | \$6.13 | \$3,065 | _____ |
| 3.02 Machinery & Equipment | \$12.00 | \$6,000 | _____ |
| 4. Investment | | | |
| 4.01 Buildings | \$3.00 | \$1,500 | _____ |
| 4.02 Machinery & Equipment | <u>\$3.60</u> | <u>\$1,800</u> | _____ |
| Total Fixed Costs | \$24.73 | \$12,365 | _____ |
| Total Operating and Fixed Costs | \$915.99 | \$457,995 | _____ |
| C. Labour | \$12.50 | \$6,250 | _____ |
| Total Cost of Production | \$928.49 | \$464,245 | _____ |
| Cost per lb of gain sold | <u>\$/cwt</u> | | |
| Feed Costs | \$54.31 | | _____ |
| Operating Costs | \$91.40 | | _____ |
| Operating Costs & Labour | \$95.02 | | _____ |
| Operating & Fixed Costs | \$98.55 | | _____ |
| Total Costs | \$102.16 | | _____ |
| Breakeven Selling Price | | | |
| Operating Costs | \$105.35 | | _____ |
| Operating Costs & Labour | \$106.83 | | _____ |
| Operating & Fixed Costs | \$108.27 | | _____ |
| Total Costs | \$109.75 | | _____ |
| Breakeven Purchase Price (based on \$102/cwt market price) | | | |
| Operating Costs | \$109.33 | | _____ |
| Operating Costs & Labour | \$106.83 | | _____ |
| Operating & Fixed Costs | \$104.39 | | _____ |
| Total Costs | \$101.89 | | _____ |

Disclaimer: This budget is only a guide and is not intended as an in-depth study of the cost of production of this industry. Interpretation and utilization of this information is the responsibility of the user. No liability for decisions based on this publication is assumed.

Assumptions

1. Average daily gain (ADG) was assumed to be 2.5 lbs/day.
2. It was assumed the feeder steer weighed in at 500 lbs. shrunk weight, and was raised to 900 lbs (846 lbs after 6 % shrink).
3. Days on feed was 160.
4. Investment in facilities and equipment was assumed to handle 500 head.

Backgrounding Cattle Production Cost Worksheet

A. Operating Costs

Your Cost

1. Feed Costs

1.01 Ground Barley

| | | | |
|----------|----------------|-----------------------|--|
| | 160.00 | days on ground barley | |
| x | 6.50 | lbs/feeder/day | |
| ÷ | 48.00 | lbs/bu | |
| <u>x</u> | <u>\$3.00</u> | /bu | |
| = | \$65.00 | /feeder | |

1.02 Barley Silage

| | | | |
|----------|----------------|----------------|--|
| | 160.00 | days on silage | |
| x | 34.00 | lbs/feeder/day | |
| ÷ | 2000.00 | lbs/ton | |
| <u>x</u> | <u>\$35.00</u> | /ton | |
| = | \$95.00 | /feeder | |

1.03 Hay

| | | | |
|----------|----------------|----------------|--|
| | 15.00 | days on hay | |
| x | 5.00 | lbs/feeder/day | |
| ÷ | 2000.00 | lbs/ton | |
| <u>x</u> | <u>\$65.00</u> | /ton | |
| = | \$2.44 | /feeder | |

1.04 Supplement(Salt,Minerals,Vitamins, Ionophore)

| | | | |
|----------|-----------------|--------------------|--|
| | 160.00 | days on supplement | |
| x | 1.00 | lbs/feeder/day | |
| ÷ | 2205.00 | lbs/tonne | |
| <u>x</u> | <u>\$351.00</u> | /tonne | |
| = | \$25.47 | /feeder | |

2. Other Operating Costs

2.01 Feeder Cattle Cost

| | | | |
|----------------|-----------------|----------------|-------|
| Commission | \$5.00 | /feeder | _____ |
| Insurance | \$1.00 | /feeder | _____ |
| Trucking-in | \$1.60 | /cwt | _____ |
| x | 500 | lbs/feeder | _____ |
| ± | <u>100</u> | <u>lbs/cwt</u> | _____ |
| = | \$8.00 | /feeder | _____ |
| Feeder | 500 | lbs/feeder | _____ |
| x | \$115.00 | /cwt | _____ |
| ± | <u>100</u> | <u>lbs/cwt</u> | _____ |
| = | \$575.00 | /feeder | _____ |
| Total = | \$589.00 | /feeder | _____ |

2.02 Straw

| | | | |
|----------|----------------|----------------|-------|
| | 4.00 | lbs/feeder/day | _____ |
| x | 160.00 | days on feed | _____ |
| <u>x</u> | <u>\$25.00</u> | <u>/ton</u> | _____ |
| = | \$8.00 | /feeder | _____ |

2.03 Veterinary Medicine & Supplies

Cattle Medication

| | | | |
|---|---------------|-------------------------------|-------|
| | \$4.80 | IBR,BVD,PI3,BRSV,Pasteurella | _____ |
| + | \$0.65 | Vitamin A-D | _____ |
| + | \$1.05 | External & Internal Parasites | _____ |
| + | \$2.30 | Blackleg & Haemophilus | _____ |
| + | \$1.71 | Growth Implants | _____ |
| ± | <u>\$6.00</u> | <u>Antibiotics</u> | _____ |
| = | \$16.51 | /feeder | _____ |

Herd Health Program
Professional Services

| | | | |
|---|---------------|----------------------|-------|
| | \$150.00 | /hour charge | _____ |
| x | 3.00 | hours | _____ |
| ± | <u>500.00</u> | <u>feeder cattle</u> | _____ |
| = | \$0.90 | /feeder | _____ |

Transportation Costs

| | | | |
|---|------------|----------------------|-------|
| | \$0.70 | /km charge | _____ |
| x | 80 | kilometres | _____ |
| x | 2 | visits | _____ |
| ± | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$0.22 | /feeder | _____ |

Total = \$17.63 /feeder _____

2.04 Annual Fuel & Repair Costs

| | | | |
|----------|---------------|----------------------|-------|
| | \$1,000.00 | repairs | _____ |
| + | \$2,000.00 | fuel costs | _____ |
| <u>±</u> | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$6.00 | /feeder | _____ |

2.05 Utilities

| | | | |
|----------|---------------|----------------------|-------|
| | \$2,000.00 | cost/year | _____ |
| <u>±</u> | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$4.00 | /feeder | _____ |

2.06 Feeder Selling Cost

Trucking

| | | | |
|----------|---------------|--------------------------|-------|
| | 900 | lbs/feeder | _____ |
| ÷ | 100 | lbs/cwt | _____ |
| <u>x</u> | <u>\$1.60</u> | <u>trucking cost/cwt</u> | _____ |
| = | \$14.40 | /feeder | _____ |

MCEC Fee, MCPA levy, selling commission

| | | | |
|----------|----------------|-------------------|-------|
| | \$2.00 | MCEC Fee | _____ |
| + | \$3.00 | MCPA Levy | _____ |
| <u>±</u> | <u>\$15.50</u> | <u>commission</u> | _____ |
| = | \$20.50 | /feeder | _____ |

Total = \$34.90 /feeder _____

2.07 Insurance

| | | | |
|----------|------------|---------------------------------|-------|
| | \$143,148 | building & equipment investment | _____ |
| x | \$0.50 | /\$100 capital | _____ |
| ÷ | 100 | /\$100 | _____ |
| <u>±</u> | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$1.43 | /feeder | _____ |

| | | | |
|----------|------------|----------------------|-------|
| | \$373,250 | herd investment | _____ |
| x | \$0.00 | /\$100 capital | _____ |
| ÷ | 100 | /\$100 | _____ |
| <u>±</u> | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$0.00 | /feeder | _____ |

| | | | |
|----------|------------|-----------------------------------|-------|
| | \$49.00 | additional coverage for liability | _____ |
| <u>±</u> | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$0.10 | /feeder | _____ |

Total = \$1.53 /feeder _____

2.08 Manure Removal

| | | | |
|----------|---------------|----------------------|-------|
| | \$3,200 | annual removal cost | _____ |
| ÷ | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$6.40 | /feeder | _____ |

2.09 Barn & Office Supplies

| | | | |
|----------|---------------|----------------------|-------|
| | \$500.00 | total barn expenses | _____ |
| ÷ | <u>500</u> | <u>feeder cattle</u> | _____ |
| = | \$1.00 | /feeder | _____ |

2.10 Death Loss

| | | | |
|----------|----------------|-------------------------|-------|
| | \$589.00 | feeder cattle cost | _____ |
| + | \$856.37 | maximum value | _____ |
| - | \$34.90 | selling costs | _____ |
| ÷ | <u>2.00</u> | average | _____ |
| × | <u>2.00</u> | <u>% mortality rate</u> | _____ |
| = | \$14.10 | /feeder | _____ |

2.11 Operating Interest

(Operating interest is charged on one half the subtotal operating costs)

| | | | |
|----------|----------------|-------------------------|-------|
| | \$589.00 | feeder cost | _____ |
| + | \$140.74 | ½ of feed & other costs | _____ |
| x | 6.50 | % operating interest | _____ |
| x | 160.00 | days on feed | _____ |
| ÷ | <u>365.00</u> | <u>days /year</u> | _____ |
| = | \$20.79 | /feeder | _____ |

Capital Costs

Buildings, Corrals & Water System

| | | |
|------------------------|-----------------|-------|
| Windbreak fence | \$6,300 | _____ |
| Pens | \$5,300 | _____ |
| Handling Facilities | \$5,500 | _____ |
| Waterers | \$5,000 | _____ |
| Gates | \$1,280 | _____ |
| Feeders | \$1,500 | _____ |
| Bunk Feeders | \$18,768 | _____ |
| Well & Pressure System | \$6,000 | _____ |
| Grain Bin | \$3,500 | _____ |
| Landscaping | <u>\$15,000</u> | _____ |
| Total | \$68,148 | _____ |

Machinery & Equipment

| | | |
|------------------|-----------------|-------|
| Tractor & Loader | \$50,000 | _____ |
| Miscellaneous | <u>\$25,000</u> | _____ |
| Total | \$75,000 | _____ |

| | | |
|-------------------------|------------------|-------|
| Total Investment | \$143,148 | _____ |
|-------------------------|------------------|-------|

B. Fixed Costs

3. Depreciation Original Cost - Salvage Value Useful Life

3.01 Buildings

| | | | |
|---|---------------|-------------------|-------|
| | \$68,148 | original cost | _____ |
| - | \$6,815 | salvage value | _____ |
| ÷ | 20.00 | years useful life | _____ |
| ± | <u>500.00</u> | feeder cattle | _____ |
| = | \$6.13 | /feeder | _____ |

3.02 Machinery & Equipment

| | | | |
|---|----------------|-------------------|-------|
| | \$75,000 | original cost | _____ |
| - | \$15,000 | salvage value | _____ |
| ÷ | 10.00 | years useful life | _____ |
| ± | <u>500.00</u> | feeder cattle | _____ |
| = | \$12.00 | /feeder | _____ |

4. Investment $\frac{\text{Original Cost} + \text{Salvage Value}}{2} \times \text{Investment Rate}$

2

4.01 Buildings

| | | | |
|---|---------------|----------------------|-------|
| | \$68,148 | original cost | _____ |
| + | \$6,815 | salvage value | _____ |
| ÷ | 2.00 | average | _____ |
| x | 4.00 | % investment rate | _____ |
| ± | <u>500.00</u> | <u>feeder cattle</u> | _____ |
| = | \$3.00 | /feeder | _____ |

4.02 Machinery & Equipment

| | | | |
|---|---------------|----------------------|-------|
| | \$75,000 | original cost | _____ |
| + | \$15,000 | salvage value | _____ |
| ÷ | 2.00 | average | _____ |
| x | 4.00 | % investment rate | _____ |
| ± | <u>500.00</u> | <u>feeder cattle</u> | _____ |
| = | \$3.60 | /feeder | _____ |

C. Labour

| | | | |
|---|----------------|-------------------|-------|
| | 1.0 | hours/feeder/year | _____ |
| ± | <u>\$12.50</u> | <u>/hour</u> | _____ |
| = | \$12.50 | /feeder | _____ |

Breakeven Calculations

| | | | |
|---|---|---------------|--------------------------|
| Cost per lb of gain sold (shrunk weight) | | | |
| Feed Costs | | \$187.91 | feed cost |
| | ÷ | <u>346</u> | <u>lbs gained weight</u> |
| | = | \$0.54 | /lb (gain sold) |
| | | | |
| Operating Costs | | \$891.26 | operating costs |
| | - | \$575.00 | feeder cost |
| | ÷ | <u>346</u> | <u>lbs gained weight</u> |
| | = | \$0.91 | /lb (gain sold) |
| | | | |
| Operating & Labour Costs | | \$903.76 | operating costs |
| | - | \$575.00 | feeder cost |
| | ÷ | <u>346</u> | <u>lbs gained weight</u> |
| | = | \$0.95 | /lb (gain sold) |
| | | | |
| Operating & Fixed | | \$915.99 | oper. & fixed costs |
| | - | \$575.00 | feeder cost |
| | ÷ | <u>346</u> | <u>lbs gained weight</u> |
| | = | \$0.99 | /lb (gain sold) |
| | | | |
| Total Costs | | \$928.49 | total costs |
| | - | \$575.00 | feeder cost |
| | ÷ | <u>346</u> | <u>lbs gained weight</u> |
| | = | \$1.02 | /lb (gain sold) |
| | | | |
| Breakeven selling price (shrunk weight) | | | |
| Operating Costs | | \$891.26 | operating costs |
| | ÷ | <u>846</u> | <u>lbs shrunk weight</u> |
| | = | \$1.05 | /lb |
| | | | |
| Operating & Labour Costs | | \$903.76 | operating & labour |
| | ÷ | <u>846</u> | <u>lbs shrunk weight</u> |
| | = | \$1.07 | /lb |
| | | | |
| Operating & Fixed | | \$915.99 | oper.& fixed costs |
| | ÷ | <u>846</u> | <u>lbs shrunk weight</u> |
| | = | \$1.08 | /lb |
| | | | |
| Total Costs | | \$928.49 | total costs |
| | ÷ | <u>846</u> | <u>lbs shrunk weight</u> |
| | = | \$1.10 | /lb |

Breakeven purchase price (shrunk weight)

Operating Costs

| | | | |
|---|---------------|----------------------------|-------|
| | 846 | lbs shrunk weight | _____ |
| x | \$102.00 | \$/cwt selling price | _____ |
| = | \$862.92 | income | _____ |
| - | \$316.26 | operating less feeder cost | _____ |
| ÷ | 500 | lbs purchase weight | _____ |
| = | \$1.09 | /lb | _____ |

Operating & Labour Costs

| | | | |
|---|---------------|----------------------------|-------|
| | 846 | lbs shrunk weight | _____ |
| x | \$102.00 | \$/cwt selling price | _____ |
| = | \$862.92 | income | _____ |
| - | \$328.76 | operating less feeder cost | _____ |
| ÷ | 500 | lbs purchase weight | _____ |
| = | \$1.07 | /lb | _____ |

Operating & Fixed

| | | | |
|---|---------------|------------------------------|-------|
| | 846 | lbs shrunk weight | _____ |
| x | \$102.00 | \$/cwt selling price | _____ |
| = | \$862.92 | income | _____ |
| - | \$340.99 | op. & fixed less feeder cost | _____ |
| ÷ | 500 | lbs purchase weight | _____ |
| = | \$1.04 | /lb | _____ |

Total Costs

| | | | |
|---|---------------|------------------------|-------|
| | 846 | lbs shrunk weight | _____ |
| x | \$102.00 | \$/cwt selling price | _____ |
| = | \$862.92 | income | _____ |
| - | \$353.49 | total less feeder cost | _____ |
| ÷ | 500 | lbs purchase weight | _____ |
| = | \$1.02 | /lb | _____ |

For more information contact your local MAFRI Office.

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