

Guidelines For Estimating Bison Cow-Calf Production Costs Based on a 60 Head Cow Herd

Date: January, 2002

This guide is designed to provide you with planning information and a format for calculating costs of production of a bison cow calf enterprise. The production costs included in this enterprise budget is not a cost study of the bison industry in Manitoba, they are estimated costs based on accepted production practices and current market conditions.

The budget estimates are based on a number of assumptions which are clearly defined in the supporting pages. Input costs are based on recommended practices and/or information obtained from producers. Good management is assumed in that a balanced feeding program is being followed, bison are on a herd health program and handling facilities are included.

The guideline can be useful for comparison purposes. Comparison of costs at different levels of production can be made with other farms, the farm over a period of time or comparing the plan with the actual results at the end of the planning period.

The budget may be adjusted to reflect your unique situation by substituting your own figures in the appropriate places. Each bison producer is encouraged to determine their own costs based on their own inputs, pasture program and level of management.

Also available, on the Manitoba Agriculture and Food website, is an Excel spreadsheet and it can be downloaded from the following address:
<http://www.gov.mb.ca/agriculture>.

Bison Cow-Calf Production Costs - Summary

A. Operating Costs	<u>\$/Cow</u>	<u>Total</u>	<u>Your Costs</u>
1. Feed Costs			
1.01 Grain	\$17.92	\$1,075	_____
1.02 Hay	\$128.67	\$7,720	_____
1.03 Salt & Minerals	\$18.07	\$1,084	_____
1.04 Creep Feed	<u>\$9.72</u>	<u>\$583</u>	_____
Total Feed Cost	\$174.38	\$10,462	_____
2. Other Operating Costs			
2.01 Veterinary Medicine & Supplie	\$20.68	\$1,241	_____
2.02 Fuel, Maintenance & Repairs	\$25.00	\$1,500	_____
2.03 Utilities	\$3.33	\$200	_____
2.04 Marketing & Transportation	\$10.00	\$600	_____
2.05 Death Loss	\$23.67	\$1,420	_____
2.06 Insurance	\$14.60	\$876	_____
2.07 Herd Replacement	\$127.08	\$7,625	_____
2.08 Miscellaneous	<u>\$8.33</u>	<u>\$500</u>	_____
Subtotal Operating Costs	\$407.07	\$24,424	_____
2.09 Operating Interest	<u>\$12.21</u>	<u>\$733</u>	_____
Total Operating Costs	\$419.28	\$25,157	_____
B. Fixed Costs			
3. Depreciation			
3.01 Facilities	\$28.75	\$1,725	_____
3.02 Machinery & Equipment	\$66.67	\$4,000	_____
4. Investment			
4.01 Facilities	\$11.50	\$690	_____
4.02 Machinery & Equipment	\$24.00	\$1,440	_____
4.03 Livestock	\$94.67	\$5,680	_____
4.03 Pasture Land & Fencing	<u>\$95.66</u>	<u>\$5,740</u>	_____
Total Fixed Costs	\$321.25	\$19,275	_____
Total Operating and Fixed Costs	\$740.53	\$44,432	_____
C. Labour	\$40.00	\$2,400	_____
Total Cost of Production	\$780.53	\$46,832	_____
Breakeven selling price/head	<u>\$/head</u>		
A. Operating Costs	\$465.87		_____
B. Operating & Fixed Costs	\$822.81		_____
C. Operating, Labour & Fixed Cost	\$867.26		_____

Breakeven Price/head = Cost ÷ % calf crop

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. If you require assistance with developing your individual budget, please contact your local MAF Office or the Farm Management Section in Winnipeg at 204-945-4937.

Bison Cow-Calf Production Costs - Input

Assumptions

1. This budget outlines the cost of production for a Bison Cow-Calf operation only.
2. Handling facilities are estimated at current market value with an estimated useful life of 20 years.
3. Machinery and equipment are estimated at current market value with an estimated useful life of 12 years.
4. Replacement heifers are valued at fair market value.
5. The budget assumes an average weaning weight of 480 lbs.

Herd Profile

Number of cows	60	
Number of bulls	4	
Calf crop %	90.00	%
Average calf weaning weight	480	lbs
Cow mortality rate	1.0	%
Calf market price	\$0.00	/cwt
Replacement rate - cows	5.0	%
Replacement rate - bulls	20.0	%

Feed Costs and Requirements

	Feed Cost		Feed Requirement	
			/Cow	/Bull
Flushing Ration	\$0.070	\$/lb	4.00	4.00 lbs/day
Days/Year on Ration			60	60 days
Hay #1	\$40.00	/ton	3.00	3.25 tons/yr
Creep Feed	\$0.09	/lb	2.00	0.00 lbs/day
Days/Year on Creep Feed			60	n/a days
Hay #3	\$0.00	/tonne	0.00	0.00 tons/yr
Salt	\$0.14	/lb	16.00	n/a lbs/year
Minerals	\$0.42	/lb	35.00	n/a lbs/year

FOOTNOTE: 1 bushel (bu) barley = 48 lbs = 21.8 kg

Veterinary Medicine & Supplies

Calf Medication

Blackleg (8 way vaccine)	\$0.55	/head
Muse	\$0.00	/head
Parasite Control	\$3.80	/head

Buildings, Fences etc.	\$500.00	
Other Operating Costs		
Utilities		
Hydro	\$200.00	
Water	\$0.00	
Telephone	\$0.00	
Marketing & Transportation (Culls)		
Trucking	\$600.00	
Investment Interest Rate	4.00	%
Operating Interest Rate	6.00	%
Insurance		
Cost per \$100 Capital Invested in		
Livestock	\$0.45	
Building & Equipment	\$0.60	
Additional Coverage for liability	\$30.00	
Miscellaneous		
Total yearly expense	\$500.00	
Herd replacement (cows only)		
Replacement Cost	\$2,000	/heifer
Average Market Value	\$525	/cow
Price Received	\$0.00	/cull cow
Land and Fencing		
Number of Acres/Cow	8	
Value/Acre	\$150	
Taxes per Acre	\$1.00	
Fence	4.0	miles
- perimeter	\$7,000	/mile
- perimeter cost	2.0	miles
- internal	\$3,000	/mile
- internal cost		

Capital Costs

	Original Value	Salvage Value	Useful Life
Handling Facilities			
Holding Chutes	\$6,000	0 %	20 years
Troughs & Miscellaneous	\$2,000	0 %	20 years
Waterers (2 @ \$ 1000)	\$2,000	0 %	20 years
Squeeze, Gates & Scale	\$6,000	0 %	20 years
Well & Pressure System	\$3,500	0 %	20 years
Pens (working & sorting)	\$15,000	0 %	20 years
Total Building Cost	\$34,500	0 %	20 years
Machinery & Equipment:			
Bale shredder	\$10,000	20 %	12 years
Tractor & Loader	\$50,000	20 %	12 years
Total	\$60,000		
Land	\$72,000		
Fence			
- perimeter	\$28,000	0 %	20 years
- internal	\$6,000	0 %	20 years
Total	\$34,000		
Breeding Stock			
Cows	\$120,000		
Bulls	\$22,000		
Total	\$142,000		
Total Capital Costs	\$342,500		
Labour Costs			
Hours	4.0	hours/cow/year	
Wage	\$10.00	/hour	

Bison Cow-Calf Production Cost Worksheet

Assumptions

1. This budget outlines the cost of production for a Bison Cow-Calf operation only.
2. Handling facilities are estimated at current market value with an estimated useful life of 20 years.
3. Machinery and equipment are estimated at current market value with an estimated useful life of 12 years.
4. Replacement heifers are valued at fair market value.
5. The budget assumes an average weaning weight of 480 lbs.
6. This budget is based on 200 days grazing and 165 days supplemental feeding.

A. Operating Costs

				<u>Your Cost</u>
1. Feed Costs				
1.01 Flushing Ration				
Cows		4.0	lbs/cow/day	
	x	60	days/year	
	x	<u>\$0.07</u>	/lb	
	=	\$16.80	/cow	
Bulls		4.0	lbs/bull/day	
	x	60	days	
	x	\$0.07	/lb	
	x	4	bulls	
	÷	<u>60</u>	<u>cows</u>	
	=	\$1.12	/cow	
Total		\$17.92	/cow	
1.02 Hay				
Cows		3.00	tons	
	x	<u>\$40.00</u>	<u>/ton</u>	
	=	\$120.00	/cow	

Your Cost

Bulls		3.25	tons	_____
	x	\$40.00	/ton	_____
	x	4	bulls	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$8.67	/cow	_____
Total		\$128.67	/cow	_____

1.03 Salt and Minerals

Cows		16	lbs salt/cow/year	_____
	x	<u>\$0.14</u>	<u>/lb</u>	_____
	=	\$2.24	/cow	_____

		35	lbs mineral/cow/year	_____
	x	<u>\$0.42</u>	<u>/lb</u>	_____
	=	\$14.70	/cow	_____

Bulls		16	lbs salt/bull/year	_____
	x	\$0.14	<u>/lb</u>	_____
	x	4	bulls	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$0.15	/cow	_____

		35	lbs mineral/bull/year	_____
	x	\$0.42	<u>/lb</u>	_____
	x	4	bulls	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$0.98	/cow	_____

Total		\$18.07	/cow	_____
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1.04 Creep Feed

		2	lbs/day	_____
	x	60	days	_____
	x	\$0.09	/lb	_____
	x	<u>90.0</u>	<u>% calf crop</u>	_____
	=	\$9.72	/cow	_____

Your Cost

2. Other Operating Costs

2.01 Veterinary Medicine & Supplies

Calf medication				
		\$0.55	blackleg	_____
+		\$0.00	vitamin	_____
+		\$3.80	parasite control	_____
=		\$4.35	total	_____
x		<u>90.00</u>	<u>% calf crop</u>	_____
=		\$3.92	/cow	_____
Cow medication				
		\$4.00	parasite control	_____
+		\$0.00	scourguard 3	_____
+		\$0.00	footrot, louse control,	_____
+		<u>\$2.56</u>	<u>ADE</u>	_____
=		\$6.56	/cow	_____
Bull medication				
		\$12.00	parasite control	_____
+		\$60.00	semen test	_____
x		4	bulls	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$4.80	/cow	_____
Herd health program				
		\$90.00	/hour charge	_____
x		2	hours	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$3.00	/cow	_____
Mileage				
		\$0.90	/km charge	_____
x		160	kilometres	_____
x		1	visits	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$2.40	/cow	_____
Total	=	\$20.68	/cow	_____

Your Cost

2.02 Fuel, Oil, Repairs & Maintenance

Machinery		\$500.00	annual fuel cost	_____
	+	\$500.00	oil, repairs & maint.	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$16.67	/cow	_____
Buildings, fences etc.		\$500.00	repairs & maint.	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$8.33	/cow	_____
Total	=	\$25.00	/cow	_____

2.03 Utilities

		\$200.00	annual cost	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$3.33	/cow	_____

2.04 Marketing & Transportation (Culls)

		\$600	annual cost	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$10.00	/cow	_____

2.05 Death Loss

Cows		\$2,000	/cow	_____
	x	<u>1.00</u>	% mortality rate	_____
	=	\$20.00	/cow	_____
Bulls		\$5,500	/bull	_____
	x	1.00	% mortality rate	_____
	x	4	bulls	_____
	÷	<u>60</u>	<u>cows</u>	_____
	=	\$3.67	/cow	_____
Total		\$23.67	/cow	_____

Your Cost

2.06 Insurance

		\$34,500	bldg & equip invest	_____
x		\$0.60	cost/\$100 Capital	_____
÷		\$100	units of \$100	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$3.45	/cow	_____
		\$142,000	total for herd	_____
÷		\$100	units of \$100	_____
x		\$0.45	insurance rate/\$100	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$10.65	/cow	_____
		\$30.00	coverage for liability	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$0.50	/cow	_____
Total	=	\$14.60	/cow	_____

2.07 Herd Replacement

Cows		\$2,000	bred heifer	_____
-		\$525	cull cow	_____
x		<u>5.00</u>	<u>% replacement rate</u>	_____
=		\$73.75	/cow	_____
Bulls		\$5,500	bull value	_____
-		\$1,500	bull cull value	_____
x		20.00	% replacement rate	_____
x		4	number of bulls	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$53.33	/cow	_____
Total		\$127.08	/cow	_____

2.08 Miscellaneous

		\$500	total office expenses	_____
÷		<u>60</u>	<u>cows</u>	_____
=		\$8.33	/cow	_____

Your Cost

2.09 Operating Interest

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

	\$407.07	subtotal operating costs	_____
÷	2	average	_____
x	<u>6.0</u>	<u>% operating interest</u>	_____
=	\$12.21	/cow	_____

Your Cost

Capital Costs

Handling Facilities		
Holding Chutes	\$6,000	_____
Troughs & Miscellaneous	\$2,000	_____
Waterers (2 @ \$ 1000)	\$2,000	_____
Squeeze, Gates & Scale	\$6,000	_____
Well & Pressure System	\$3,500	_____
Pens (working & sorting)	<u>\$15,000</u>	_____
Total Building Cost	\$34,500	_____
Machinery & Equipment:		
Bale shredder	\$10,000	_____
Tractor & Loader	<u>\$50,000</u>	_____
Total	\$60,000	_____
Land	\$72,000	_____
Fence		
- perimeter	\$28,000	_____
- internal	<u>\$6,000</u>	_____
Total	\$34,000	_____
Breeding Stock		
Cows	\$120,000	_____
Bulls	<u>\$22,000</u>	_____
Total	\$142,000	_____
Total Capital Costs	\$342,500	_____

B. Fixed Costs

Original Cost - Salvage Value
Useful Life

Your Cost

3. Depreciation

3.01 Handling Facilities

	\$34,500	original value	_____
-	\$0	salvage value	_____
÷	20	years useful life	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$28.75	/cow	_____

3.02 Machinery & Equipment

Tractor & Loader

	\$50,000	original value	_____
-	\$10,000	salvage value	_____
÷	12	years useful life	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$55.56	/cow	_____

Miscellaneous Machinery

	\$10,000	original value	_____
-	\$2,000	salvage value	_____
÷	12	years useful life	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$11.11	/cow/year	_____

Total	=	\$66.67	/cow	_____
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4. Investment:

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

4.01 Handling Facilities

	\$34,500	total building value	_____
+	\$0	salvage value	_____
÷	2	average	_____
x	4.00	% investment interest	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$11.50	/cow	_____

Your Cost

4.02 Machinery & Equipment

Tractor and Loader

	\$50,000	original value	_____
+	\$10,000	salvage value	_____
÷	2	average	_____
x	4.00	% investment interest	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$20.00	/cow	_____

Miscellaneous Machinery

	\$10,000	original value	_____
+	\$2,000	salvage value	_____
÷	2	average	_____
x	4.00	% investment interest	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$4.00	/cow	_____

Total = \$24.00 /cow _____

4.03 Livestock

Cows

	\$2,000	/cow	_____
x	<u>4.00</u>	<u>% investment interest</u>	_____
=	\$80.00	/cow	_____

Bulls

	\$5,500	bull value	_____
x	4.00	% investment interest	_____
x	4	bulls	_____
÷	<u>60</u>	<u>cows</u>	_____
=	\$14.67	/cow	_____

Total = \$94.67 /cow _____

4.04 Pasture

Land

	8	acres/cow	_____
x	\$150.00	/acre	_____
x	<u>4.00</u>	<u>% investment interest</u>	_____
=	\$48.00	/cow	_____

			<u>Your Cost</u>
Taxes			
	8	acres/cow	
x	<u>\$1.00</u>	<u>/acre</u>	
=	\$8.00	/cow	
Depreciation on fence			
	\$28,000	perimeter fence	
+	\$6,000	cross fence	
=	\$34,000	fence cost	
-	\$0	salvage value	
÷	20	years useful life	
÷	<u>60</u>	<u>cows</u>	
=	\$28.33	/cow	
Fence Investment Cost			
	\$34,000	fence cost	
+	\$0	salvage value	
=	\$34,000	total	
÷	2	average	
x	4.00	% investment interest	
÷	<u>60</u>	<u>cows</u>	
=	\$11.33	/cow	
Total	= \$95.66	/cow	

C. Labour

	4.0	hours/cow/year	
x	<u>\$10.00</u>	<u>/hour</u>	
=	\$40.00	/cow	

For further assistance contact your local Manitoba Agriculture and Food office

Prepared by:

Peter Blawat, P.Ag.

Farm Management Specialist

Ray Salmon, P.Ag.

Bison Specialist