





Guidelines For Estimating

Beef Replacement Heifer Costs

For Weight Range of 550 - 1200 lbs Based on 30 Head

Date: September, 2024

This guide is designed to provide you with planning information and a format for calculating costs of production of a replacement heifer enterprise in Manitoba. General Manitoba Agriculture recommendations are assumed in using feed and veterinary inputs. These figures provide an economic evaluation of the livestock and estimated prices required to cover all costs. Costs include labour, investment and depreciation, but do not include management costs, nor do they necessarily represent the average cost of production in Manitoba.

Replacement heifers generally refers to the feeding of heifer calves from weaning until they are put onto pasture for breeding. An example of a typical replacement heifer operation would be, feed 550 pound heifers to gain 1.25 to 1.75 pounds per day for approximately 200 to 250 days and put on pasture for 120 to 140 days to gain 1.25 to 1.75 pounds per day to produce a 1200 pound bred replacement heifer.

These budgets may be adjusted by putting in your own figures. As a producer you are encouraged to calculate your own costs of production. Good management is assumed in that a balanced ration is being fed, livestock are on a herd health program and handling facilities are included.

This tool is available as an Excel worksheet at:



The Farm Machinery Custom and Rental Rate Guide determine machinery costs.

is also available to help

Note: 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 use of this information is the responsibility of the user. If you need help with a budget, contact a Farm Management Specialist.

Replacement Heifer Product Based on 30 heifers fo		
A. Operating Costs	Cost/Head	Total Cost Your C
1. Feed Costs		<u></u> <u></u>
1.01 Ground Barley	\$136.50	\$4,095
1.02 Hay	\$233.13	\$6,994
1.03 Supplement	\$61.60	\$1,848
1.04 Other Feed	<u>\$0.00</u>	<u>\$0</u>
Total Feed Costs	\$431.23	\$12,937
2. Other Operating Costs		
2.01 Heifer Cost	\$1,942.20	\$58,266
2.02 Breeding Cost	\$45.46	\$1,364
2.03 Straw 2.04 Veterinary Medicine & Supplies	\$31.36 \$19.20	\$941 \$576
2.05 Annual Fuel & Repair Costs	\$8.33	\$250
2.06 Utilities	\$4.37	\$131
2.07 Replacement Heifer Selling Cost	\$58.30	\$1,749
2.08 Insurance	\$15.01	\$450
2.09 Manure Removal	\$11.67	\$350
2.10 Pasture Costs	\$147.50	\$4,425
2.11 Barn & Office Supplies	\$1.20	\$36
2.12 Death Loss	<u>\$27.42</u>	\$823
Subtotal Operating Costs	\$2,743.25	\$82,298
2.13 Operating Interest	<u>\$175.22</u>	<u>\$5,257</u>
Total Operating Costs	\$2,918.47	\$87,555
B. Fixed Costs		
3. Depreciation		
3.01 Buildings	\$16.28	\$488
3.02 Machinery & Equipment	\$50.40	\$1,512
4. Investment		
4.01 Buildings	\$7.96	\$239
4.02 Machinery & Equipment	\$15.12	\$454
4.03 Pasture Land	\$0.00 \$90.76	\$ <u>0</u>
Total Fixed Costs Total Operating and Fixed Costs	<u>\$89.76</u> \$3,008.23	<u>\$2,693</u> \$90,248
Total Operating and Tixed Costs	ψ3,000.23	ψ30,240
C. Owners - Labour & Living	<u>\$58.50</u>	<u>\$1,755</u>
Total Cost of Production	\$3,066.73	\$92,003
Drofitability.ou	d Drankovan Analysia	
	d Breakeven Analysis	T-4-1
Estimated Farmgate Gross Revenue	d Breakeven Analysis	<u>Total</u>
Estimated Farmgate Gross Revenue 26 Bred Heifers @ \$3600/hd market price		\$9 <mark>3,600</mark>
Estimated Farmgate Gross Revenue		
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Estimated Farmgate Gross Revenue 26 Bred Heifers @ \$3600/hd market price 4 Cull Heifers @ \$3300/hd (\$275/cwt) market	orice Breakeven Heifer Calf Purchase	\$93,600 <u>\$13,200</u> \$106,800 Breakeven Bred Heifer Selling
Estimated Farmgate Gross Revenue 26 Bred Heifers @ \$3600/hd market price 4 Cull Heifers @ \$3300/hd (\$275/cwt) market Breakeven Price Operating Costs	Breakeven Heifer Calf Purchase Price (\$/cwt) @	\$93,600 \$13,200 \$106,800 Breakeven Bred Heifer Selling Price (\$/hd) @ \$350/cwt heifer price \$2,859.81
Estimated Farmgate Gross Revenue 26 Bred Heifers @ \$3600/hd market price 4 Cull Heifers @ \$3300/hd (\$275/cwt) market Breakeven Price Operating Costs Operating Costs & Labour	Breakeven Heifer Calf Purchase Price (\$/cwt) @ \$3600/hd market price \$469.77 \$459.13	\$93,600 \$13,200 \$106,800 Breakeven Bred Heifer Selling Price (\$/hd) @ \$350/cwt heifer price \$2,859.81 \$2,927.31
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Note: 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.

Replacement Heifer Production Costs

Assumptions

- 1. This budget outlines the cost of production for a replacement heifer enterprise.
- 2. Buildings and equipment are valued at new cost.
- 3. All feed is purchased.

Herd Profile

Number of Replacement Heifers Purchased	30	head
Number of Bulls		bulls
Heifer Mortality Rate	1.00	%
Heifer Purchased Weight	550	lbs
Heifer Calf Price	\$350	/cwt
Days on Feed (feedlot)	224	days
Average Daily Gain (feedlot)	2.00	lbs/day
Replacement Heifer Ending Feedlot Weight	998	lbs
Tropiacement Fielier Enaing Feedlet Weight	330	103
On Pasture Weight	1,000	lbs
Days on Pasture	140	days
Average Daily Gain (pasture)	1.43	lbs/day
Off Pasture Weight	1,200	lbs
Estimated Culling rate Bred Replacement Heifers	12.00	%
Calculated culling rate Bred Replacement Heifers	13.33	% (due to rounding)
Number Bred Heifers Marketed	26	(),
Number Cull Heifers marketed	4	
Bred Replacement Heifer market value	\$3,600	/head
Cull heifer market price	\$275	/cwt
Cull heifer market value	\$3,300	/head
Herd Replacement (Bulls)		

Bull Replacement Rate	25.0 %
Original Cost	\$5,000.00 /bull
Price Received/Cull Bull	\$3,500,00 /bull

Pasture Costs

Pasture Costs		<u>Usage</u>
Rented Pasture Costs (per head per day)	\$1.00	100 %
Owned Pasture Land Value (per acre)	\$1,800.00	<u>0</u> %
Owned Pasture Carrying Capacity (acres/head)	2.50	100
Owned Pasture Property Taxes (per acre)	\$10.00	
Pasture checking costs (ie. fuel)	\$225.00	

Feed Costs

	Market Replacement Heifer Price Requirement				Replacement Heifer <u>Requirement</u>	Days on <u>Feed</u>
Ground Barley	\$4.50	/bu	6.50 lbs/day	224		
Hay	\$115.00	/ton	18.10 lbs/day	224		
Mineral/Rumensin Pre Mix	\$550.00	/ton	1.00 lbs/day	224		
Other Feed #1	\$0.00	/ton	0.00 lbs/day	0		
Other Feed #2	\$0.00	/ton	0.00 lbs/day	0		

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

Heifer Purchase Costs Buying Commission	\$5.00	/head
Trucking-in	\$1.90	
Insurance fee	\$1.75	
Straw Bedding		
Heifers number of lbs/day	4.00	/head
Bulls - number of tons/Bull/Year	1.0	
Cost/Ton	\$70.00	/ton
Veterinary Medicine & Supplies Cattle Medication		
IBR,BVD,PI3,BRSV, Pasteurella	\$5.00	/head
Vitamin A-D	\$0.50	
External & Internal Parasites	\$0.72	/head
Blackleg & Haemophilus	\$1.65	/head
Antibiotics	\$0.00	/head
Herd Health Program		
Professional Services	4.00	L
Total Yearly Hours Rate	1.00 \$180.00	hours
Transportation	\$180.00	mour
Total Kilometres (round trip)	80.0	km
Rate	\$1.00	
Number of Yearly Visits	2	7.3.1.
,		
Annual Fuel & Repair Costs		
Repairs (Machinery, Equipment & Facilities)	\$100.00	
Fuel Costs	\$150.00	
Utilities Data	¢0.00507	/ IA/A/Ib
Hydro - Rate	\$0.09587	/ KVVII
12 kWh per heifer 0.25 1000 watt waterer	\$34.51 \$96.64	
Total Hydro	<u>\$96.64</u> \$131.15	
rotal riyuro	φ151.15	
Trucking Cost		
Average Weight	1,200	/lbs per head
Trucking Cost	\$1.90	/cwt
Marketing Cost		
MBP/NCO Levy \$/Head	\$5.50	
Commission on Sales Market Value	\$30.00	
Market value	\$300.00	/CWI
Manure Removal		
Annual Cost for Removal	\$350.00	
Insurance		
Cost per \$100 Capital Invested in		
a) Livestock	\$0.45	
b) Building & Equipment		/\$100
Additional Coverage for Liability	\$49.00	/year
Barn & Office Supplies		
Barn & Office Supplies Total yearly expense relating to barn	\$36.00	
Total yearly expense relating to barri	Ψ30.00	

Operating Interest Rate	7.50 %
Investment Interest Rate	4.00 %
Feed Requirement Per Bull	

Barley 7.00 lbs/day
Days/Year on Barley 120 days
Hay (Good Quality) 4.00 tons/yr

Breeding Costs

Health Management Costs \$10.00 /bull Semen Test \$60.00 /bull

FOOTNOTE: cwt = hundred-weight = 100 lbs

Capital Costs	Original <u>Value</u>	Salvage <u>Value</u>	Useful <u>Life</u>
Buildings,Corrals & Water System			
Windbreak fence	\$800	10 %	20 years
Pens	\$800	10 %	20 years
Handling Facilities	\$2,000	10 %	20 years
Waterers	\$1,200	10 %	20 years
Gates	\$300	10 %	20 years
Feeders	\$500	10 %	20 years
Bunk Feeders	\$1,250	10 %	20 years
Well & Pressure System	\$2,000	10 %	20 years
Grain Bin	\$1,000	10 %	20 years
Landscaping	<u>\$1,000</u>	10 %	20 years
Total	\$10,850		
Machinery & Equipment			
Tractors & Loader (\$160,000 @ 4%)	\$6,400	20 %	10 years
Miscellaneous	\$12,500	20 %	10 years
Total Investment	\$29,750		
Labour Costs		Total	
Feedlot Labour - Hours/heifer		1.00 ho	ours
Pasture Labour - Hours/day		0.25 ho	ours
Labour Rate		\$27.00 /hd	our

Replacement Heifer Production Cost Worksheet

Assumptions

- 1. Feedlot average daily gain (ADG) was assumed to be 2 lbs/day. Pasture average daily gain (ADG) was assumed to be 1.43 lbs/day.
- 2. It was assumed the heifer calves weighed in at 550 lbs shrunk weight, and was raised to 998 lbs (feedlot) and 1200 lbs (pasture).
- 3. Days on feed was 224 and days on pasture was 140.
- 4. Investment in facilities and equipment was assumed to handle 30 head.

A. Operating Costs			Your Cost
1. Feed Costs			
1.01 Ground Barley			
Ground Lane,	224.00	days on ground barley	
X	6.50	lbs/heifer/day	
÷	48.00	lbs/bu	
<u>x</u>	\$4.50	/bu	
<u></u>	\$136.50	/heifer	
	V 100100		
1.02 Hay			
,	224.00	days on hay	
X	18.10	lbs/heifer/day	
÷	2000.00	lbs/ton	
<u>x</u>	\$115.00	/ton	
=	\$233.13	/heifer	
1.03 Supplement (Salt, M	inerals,Vitami	ns, lonophore)	
	224.00	days on supplement	
X	1.00	lbs/heifer/day	
÷	2000.00	lbs/ton	
<u>x</u>	<u>\$550.00</u>	<u>/ton</u>	
=	\$61.60	/heifer	
1.04 Other Feed			
	0.00	days on other feed	
X	0.00	lbs/heifer/day	
÷	2000.00	lbs/ton	
<u>x</u>	<u>\$0.00</u>	<u>/ton</u>	
=	\$0.00	/heifer	
	0.00	days on other feed	
X	0.00	lbs/heifer/day	
÷	2000.00	lbs/ton	
<u>X</u>	<u>\$0.00</u>	<u>/ton</u>	
=	\$0.00	/heifer	
Total =	\$0.00	/heifer	
2. Other Operating Costs			
2. Other Operating Costs 2.01 Heifer Cost			
Commission	\$5.00	/heifer	
Insurance	\$5.00 \$1.75	/heifer	
ilibulatice	φ1./3	/ II GII GI	
Trucking-in	\$1.90	/cwt	
X	550	/heifer	
<u>±</u>	100	lbs/cwt	
=	\$10.45	/heifer	
	Ţ 10.10	,	

Heifer x ÷	550 \$350.00 <u>100</u>	lbs/heifer /cwt <u>lbs/cwt</u>	
= Total =	\$1,925.00 \$1,942.20	/heifer /heifer	
2.02 Breeding Costs			
Feed for Bulls			
Hay	4.00	tons good quality	
X	\$115.00	/ton	
X	1.00	bulls	
<u>÷</u>	30.00	replacement heifers	
=	\$15.33	/heifer	
Barley	7.00	lbs barley/bull/day	
x	120.00	days	
÷	48.00	lbs/bu	
X	\$4.50	/bushel bulls	
X	1.00 <u>30.00</u>		
<u>÷</u> =	\$2.63	<u>replacement heifers</u> /heifer	
	Ψ2.00	71101101	
Total =	\$17.96	/heifer	
Straw for Bulls			
	1.00	tons/bull/year	
X	\$70.00	/ton	
X	1.00	bulls	
<u>÷</u> =	30.00 \$2.33	replacement heifers /heifer	
_	φ2.33	/ileliei	-
Vet & Medicine for Bulls	# CO 00		
	\$60.00 \$10.00	semen test total vet cost/bull	
+ X	1.00	bulls	
	30.00	replacement heifers	
<u> </u>	\$2.33	/heifer	
Replacement of Bulls			
p.accincin of Dallo	\$5,000	bull cost	
-	\$3,500	bull salvage value	
x	25.00	% replacement rate	
x	1.00	bulls	
<u> </u>	30.00	replacement heifers	
=	\$12.50	/heifer	
Investment in Bulls			
	\$5,000	bull cost	
+	\$3,500	bull salvage value	
÷	2.00 4.00	average % investment rate	
X X	1.00	bulls	
÷	30.00	replacement heifers	
=	\$5.67	/heifer	

Pasture Costs for Bulls			
	\$140.00	/bull pasture cost	
X	1.00	bulls	
<u>÷</u> =	<u>30.00</u> \$4.67	<u>replacement heifers</u> /heifer	
_	Φ4.07	/ileliei	
Total =	\$45.46	/heifer	
0.00 04			
2.03 Straw Heifers	4.00	lbs/heifer/day	
X	224.00	days on feed	
<u>X</u>	<u>\$70.00</u>	/ton	
=	\$31.36	/heifer	
2 04 Veterinam, Medicine 9	Cumpling		
2.04 Veterinary Medicine & Cattle Medication	Supplies		
	\$5.00	IBR,BVD,PI3,BRSV,Pasteurella	
+	\$0.50	Vitamin A-D	
+	\$0.72	External & Internal Parasites	
+	\$1.65	Blackleg & Haemophilus	
<u>+</u> =	\$0.00 \$7.07	Antibiotics /heifer	
-	\$7.87	mener	
Herd Health Program			
Professional Services			
	\$180.00	/hour charge	
×	1.00	hours	
<u> </u>	<u>30.00</u> \$6.00	<u>replacement heifers</u> /heifer	
_	ψ0.00	/Hellel	
Transportation Costs			
	\$1.00	/km charge	
X	80	kilometres	
X	2 <u>30</u>	visits replacement heifers	
<u>÷</u> =	\$5.33	/heifer	
	Ψ0.00	,	
Total =	\$19.20	/heifer	
2.05 Annual Fuel & Repair	Costs		
	\$100.00	repairs	
+	\$150.00	fuel costs	
±	<u>30</u>	replacement heifers	
=	\$8.33	/heifer	
2.06 Utilities			
	\$131.15	cost/year	
<u> </u>	<u>30</u>	replacement heifers	
=	\$4.37	/heifer	
2.07 Heifer Selling Cost			
Trucking			
J	1,200	lbs/heifer	
÷	100	lbs/cwt	
<u>X</u>	\$1.90	trucking cost/cwt	
=	\$22.80	/heifer	

MBP levy, selling commission				
-	+	\$5.50	MBP Levy	
	<u>+</u>	<u>\$30.00</u>	commission	
:	=	\$35.50	/heifer	
Total :	=	\$58.30	/heifer	
		,		
2.08 In	surance			
		\$29,750	building & equipment investment	
	X	\$0.40	/\$100 capital	
	÷	100	/\$100	
	<u>÷</u>	<u>30</u>	replacement heifers	
:	=	\$3.97	/heifer	
		\$62,750	herd investment	
,	x	\$0.45	/\$100 capital	
	÷	100	/\$100	
	<u> </u>	<u>30</u>	replacement heifers	
:	=	\$9.41	/heifer	
		\$49.00	additional coverage for liability	
	<u>÷</u>	30	replacement heifers	
:	=	\$1.63	/heifer	
Total :	_	\$15.01	/heifer	
TOtal .	_	\$15.01	Hellel	
2.09 M	anure Removal			
		\$350	annual removal cost	
	<u>÷</u> =	30	replacement heifers	
	=	\$11. 67	/heifer	
	asture Costs			
	Pasture Rental	\$1.00	cost/head/day rental	
	÷ 	140	days on pasture	
	<u>x</u> =	<u>100</u> \$140.00	<u>pasture usage</u> /heifer	
	– Pasture Checking	\$225.00	cost per year	
	_	Ψ223.00 <u>30</u>	replacement heifers	
	<u>÷</u> =	\$7.50	/heifer	
Total :		\$147.50	/heifer	
2.11 B	arn & Office Supplie	s		
		\$36.00	total barn expenses	
	<u>÷</u> =	<u>30</u>	replacement heifers	
:	=	\$1.20	/heifer	
2 42 5	aath Laaa			
2.12 D	eath Loss	¢1 0/2 20	heifer cost	
-	+	\$1,942.20 \$3,600.00	maximum value	
	<u>.</u>	\$58.30	selling costs	
	- ÷	2.00	average	
	<u>x</u>	1.00	% mortality rate	
	<u>^</u> =	\$27.42	/heifer	

2.13 Operating Interest

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

+ x x ± =	\$1,942.20 \$400.53 7.50 364.00 <u>365.00</u> \$175.22	heifer cost ½ of feed & other costs % operating interest days on feed & pasture days /year /heifer		
	Capit	al Costs		
Buildings,Corrals & Water Windbreak fence	System	\$800		
Pens		\$800		
Handling Facilities		\$2,000		
Waterers		\$1,200		
Gates		\$300		
Feeders		\$500		
Bunk Feeders		\$1,250		
Well & Pressure System		\$2,000		
Grain Bin		\$1,000		
Landscaping		<u>\$1,000</u>		
Total		\$10,850		
Machinery & Equipment				
Tractor & Loader		\$6,400		
Miscellaneous		<u>\$12,500</u>		
Total		\$18,900		
Total Investment		\$29,750		
B. Fixed Costs				
3. Depreciation Original Co	ost - Salvage	e Value		
	seful Life			
3.01 Buildings				
	\$10,850	original cost		
-	\$1,085	salvage value		
÷	20.00	years useful life		
<u> </u>	30.00	replacement heifers		
=	\$16.28	/heifer		
3.02 Machinery & Equipme	ent			
	\$18,900	original cost		
-	\$3,780	salvage value		
÷	10.00	years useful life		
± 30.00 = \$50.40		replacement heifers		
=	\$50.40	/heifer		
4. Investment Original Cost + Salvage Value x Investment Rate				
2				
4.01 Buildings				
	\$10,850	original cost		
+	\$1,085	salvage value		
÷	2.00	average		
X	4.00	% investment rate		
<u> </u>	30.00	replacement heifers		
=	\$7.96	/heifer		

4.02	Machiner	& Equipment
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		\$18,900	original cost	
	+	\$3,780	salvage value	
	÷	2.00	average	
	Χ	4.00	% investment rate	
	<u>÷</u>	30.00	replacement heifers	
	=	\$15.12	/heifer	
4.03 F	Pasture			
	Land	2.50	acres/head	
	X	\$1,800.00	/acre	
	X	4.00	% investment rate	
	<u>x</u>	<u>0</u>	pasture usage	
	=	\$0.00	/heifer	
	Taxes	2.50	acres/head	
	X	\$10.00	/acre	
	<u>X</u>	<u>0</u>	pasture usage	
	=	\$0.00	/heifer	
Total	=	\$0.00	/heifer	
C. Labour				
Feedlo	ot	1.0	hours/heifer	
	<u>x</u>	<u>\$27.00</u>	<u>/hour</u>	
	=	\$27.00	/heifer	
Pastur	re	0.25	hours/day pasture	
	X	140.0	days on pasture	
	<u>÷</u>	30.00	replacement heifers	
	<u>x</u>	<u>\$27.00</u>	<u>/hour</u>	
	=	\$31.50	/heifer	
Total	=	\$58.50	/heifer	

Profitability and Breakeven Analysis:

Breakeven Bred Heifer Price (\$/hd) = (total cost - cull heifer revenue) / # bred heifers sold eg.(\$92,003 - \$13,200) / 26 = \$3,030.88

Breakeven Heifer Price (\$/cwt) =(((gross revenue / # heifers) - (total cost - heifer cost)) / (heifer purchase wt. / 100)) eg.(((\$106,800 / 30) - (\$3,066.73 - \$1,942.2)) / (\$50 / 100)) = \$442.81

Return on Investment (ROI) = (Gross Revenue - Total Cost) / Total Cost (eg. (\$106,800 - \$92,003) / \$92,003 = 16.1%

Return on Asset (ROA) = ((Margin Over Operating - Labour - Building Depreciation - Machinery Depreciation) / Building, Machinery & Equipment Investment) (eg. ((\$19,245 - \$1,755 - \$488 - \$1,512) / \$29,750) = 56.5%

Cost Summary:

Summer Grazing Cost Per Heifer Per Day = pasture cost \div days (eg. \$147.50 \div 140 = \$1.05) Winter Feed Cost Per Heifer Per Day = feed cost \div days (eg. \$431.23 \div 224 = \$1.93)

Yardage Cost Per Heifer Per Day = $(\$31.36 \text{ straw} + \$8.33 \text{ fuel } \& \text{ repair} + \$4.37 \text{ utilities} + \$11.67 \text{ manure removal} + \$16.28 \text{ building depreciation} + \$50.40 \text{ machinery depreciation} + \$7.96 \text{ building investment} + \$15.12 \text{ machinery investment} + \$58.50 \text{ labour}) \div 224 \text{ days} = \0.91

September, 2024

Contact Us

For more information, contact a Farm Management Specialist.

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