
2024 Cost of Production

Beef Cow-Calf

300 Cow Herd - Corn Silage Ration



Guidelines For Estimating
Beef Cow-Calf Production Costs
Based on a 300 Head Cow Herd - Corn Silage Ration

Date: September, 2023

This guide is designed to provide you with planning information and a format for calculating costs of production of a cow calf 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.

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](#) is also available to help determine machinery costs.

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.

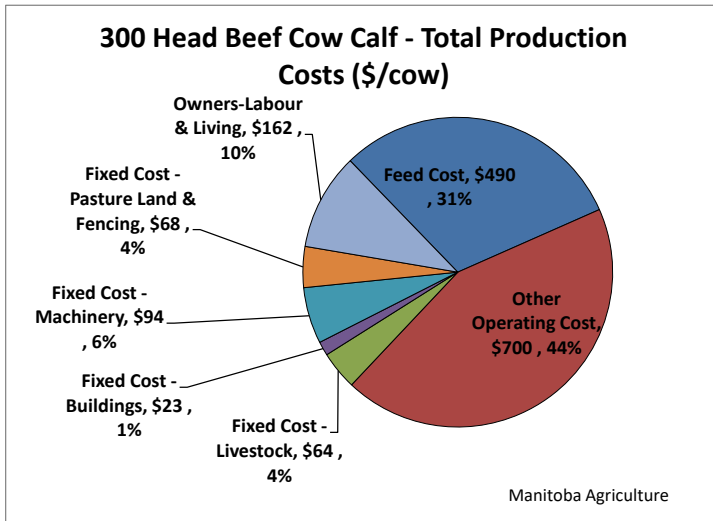
Cow-Calf Production Costs - September, 2023			
Based on a 300 Cow Herd			
A. Operating Costs	Cost/Cow	Total Cost	Your Cost
1. Feed Costs			
Grain and Concentrates	\$95.72	\$28,717	_____
Forages	\$311.02	\$93,305	_____
Salt & Minerals	\$42.09	\$12,627	_____
Extended Grazing Forages	\$41.65	\$12,496	_____
Total Feed Cost	\$490.49	\$147,145	_____
2. Other Operating Costs			
Straw	\$70.00	\$21,000	_____
Veterinary Medicine & Supplies	\$24.81	\$7,443	_____
Breeding Costs	\$56.62	\$16,986	_____
Fuel, Maintenance & Repairs	\$38.78	\$11,635	_____
Utilities	\$9.48	\$2,843	_____
Marketing & Transportation	\$37.76	\$11,327	_____
Death Loss	\$27.50	\$8,250	_____
Manure Removal	\$10.84	\$3,252	_____
Insurance	\$14.58	\$4,374	_____
Herd Replacement	\$209.40	\$62,820	_____
Pasture Rental	\$56.25	\$16,875	_____
Pasture Operating	\$35.03	\$10,508	_____
Labour - Hired	\$54.00	\$16,200	_____
Miscellaneous	\$3.33	\$999	_____
Subtotal Operating Costs	\$1,138.86	\$341,657	_____
Operating Interest	\$51.25	\$15,375	_____
Total Operating Costs	\$1,190.11	\$357,032	_____
B. Fixed Costs			
Livestock	\$64.47	\$19,342	_____
Buildings	\$23.49	\$7,048	_____
Machinery & Equipment	\$94.31	\$28,292	_____
Pasture Land & Fencing	\$68.47	\$20,542	_____
Total Fixed Costs	\$250.75	\$75,224	_____
C. Owners - Labour & Living	\$162.00	\$48,600	_____
Total Cost of Production	\$1,602.86	\$480,856.00	_____
Profitability and Breakeven Analysis			
Estimated Farmgate	Per Cow	Total	Per Acre
Price (\$ per cwt)	\$356.09		
Calf weight (lbs)	575		
Gross Revenue / cow	\$1,945.14	\$583,542	\$406
Operating Expense Ratio	61.2%		
Marginal Returns			
Over Feed Costs	\$1,455	\$436,397	\$304
Over Operating Costs	\$755	\$226,509	\$158
Over Operating & Fixed Costs	\$504	\$151,285	\$105
Over Total Costs (Net Profit)	\$342	\$102,685	\$72
Breakeven (Lb. weaned calf)	Price (\$/cwt)		
Over Feed & Operating Costs	\$218		
Over Feed, Operating & Fixed Costs	\$264		
Over Total Costs	\$293		
Estimated Return on Investment (ROI)	21.4%		
Estimated Return on Asset (ROA)	8.7%		
Cost Summary Per Cow Per Day			
Summer grazing (based on 135 days)	\$1.183		
Extended grazing (based on 35 days)	\$1.190		
Winter feed (based on 195 days)	\$2.316		
Yardage (based on 230 days)	\$1.837		
Total Overwinter Costs (based on 230 days)	\$3.981		

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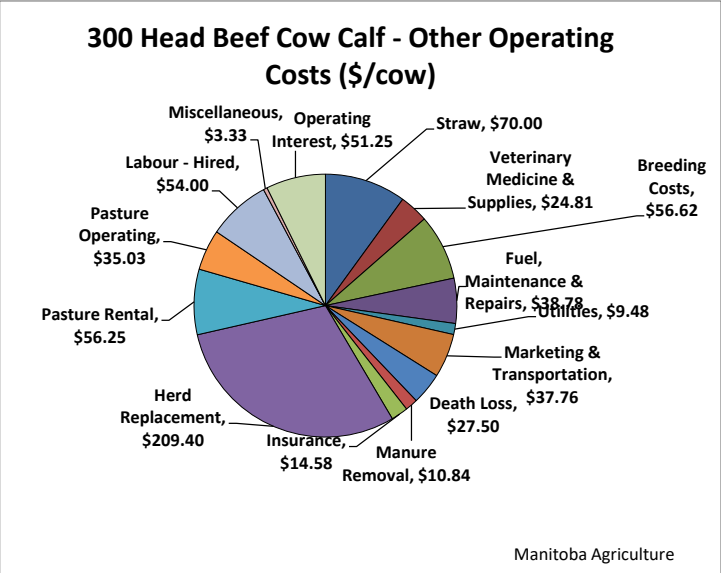
Cow-Calf Standardized Operating Statement - September, 2023
Based on a 300 Cow Herd

	<u>Per Cow</u>		<u>Total</u>	<u>Your Farm</u>
= Revenue	\$1,945.14		\$583,542	
- Cost of Goods Sold (CoGS)				
Grain and Concentrates	\$95.72	4.9%	\$28,717	
Forages	\$311.02	16.0%	\$93,305	
Salt & Minerals	\$42.09	2.2%	\$12,627	
Extended Grazing Forages	\$41.65	2.1%	\$12,496	
Pasture Operating	\$35.03	1.8%	\$10,508	
Straw	\$70.00	3.6%	\$21,000	
Veterinary Medicine & Supplies	\$24.81	1.3%	\$7,443	
Death Loss	\$27.50	1.4%	\$8,250	
Herd Replacement	\$209.40	10.8%	\$62,820	
Breeding Costs	\$56.62	2.9%	\$16,986	
Manure Removal	\$10.84	0.6%	\$3,252	
	\$924.68	47.5%	\$277,404	
= Gross Margin (GM)	\$1,020.46	52.5%	\$306,138	
- Direct Operating Expenses (DOE)				
Labour - Hired	\$54.00	2.8%	\$16,200	
Owners - Labour & Living	\$162.00	8.3%	\$48,600	
Fuel, Maintenance & Repairs	\$38.78	2.0%	\$11,635	
Utilities	\$9.48	0.5%	\$2,843	
Marketing & Transportation	\$37.76	1.9%	\$11,327	
	\$302.02	15.5%	\$90,605	
= Contribution Margin (CM)	\$718.44	36.9%	\$215,533	
- Operating Overheads (OH)				
Insurance	\$14.58	0.7%	\$4,374	
Miscellaneous	\$3.33	0.2%	\$999	
	\$17.91	0.9%	\$5,373	
= Earnings Before Interest Taxes Depreciation Amortization Rent (EBITDAR) or Operating Income				
EBITDAR	\$700.53	36.0%	\$210,160	
- Cost of Capital (CoC) or Depreciation/Amortization/Lease/Rent				
Owned Cows Amortization Costs	\$47.14	2.4%	\$14,143	
Owned Cows Opportunity Cost	\$0.00	0.0%	\$0	
Pasture & Fencing Depreciation Costs	\$9.38	0.5%	\$2,814	
Pasture & Fencing Amortization Costs	\$28.40	1.5%	\$8,521	
Pasture & Fencing Opportunity Costs	\$0.00	0.0%	\$0	
Pasture Rental	\$56.25	2.9%	\$16,875	
Building Depreciation Cost	\$13.56	0.7%	\$4,068	
Building Amortization Costs	\$7.26	0.4%	\$2,179	
Building Opportunity Costs	\$0.00	0.0%	\$0	
Machinery & Eq. Depreciation Costs	\$63.36	3.3%	\$19,008	
Machinery & Eq. Amortization Costs	\$22.63	1.2%	\$6,789	
Machinery & Eq. Opportunity Costs	\$0.00	0.0%	\$0	
	\$247.99	12.7%	\$74,397	
= Earnings Before Interest Taxes (EBIT)	\$452.54	23.3%	\$135,763	
- Interest Expenses				
Operating Interest	\$51.25	2.6%	\$15,375	
Owned Cows Interest Cost	\$17.33	0.9%	\$5,199	
Pasture & Fencing Interest Costs	\$30.69	1.6%	\$9,207	
Building Interest Cost	\$2.67	0.1%	\$801	
Machinery & Equipment Interest Costs	\$8.32	0.4%	\$2,495	
	\$110.26	5.7%	\$33,077	
= Earnings Before Taxes (EBT)	\$342.28	17.6%	\$102,686	

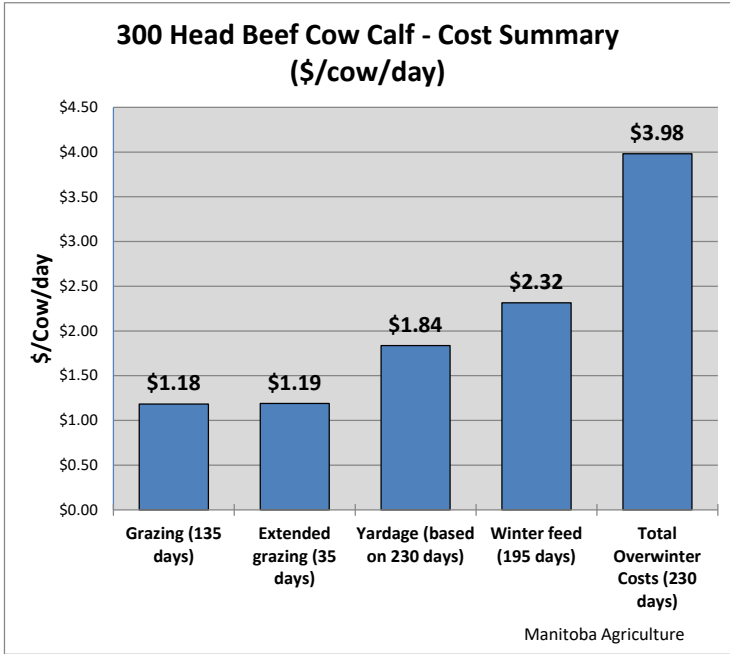
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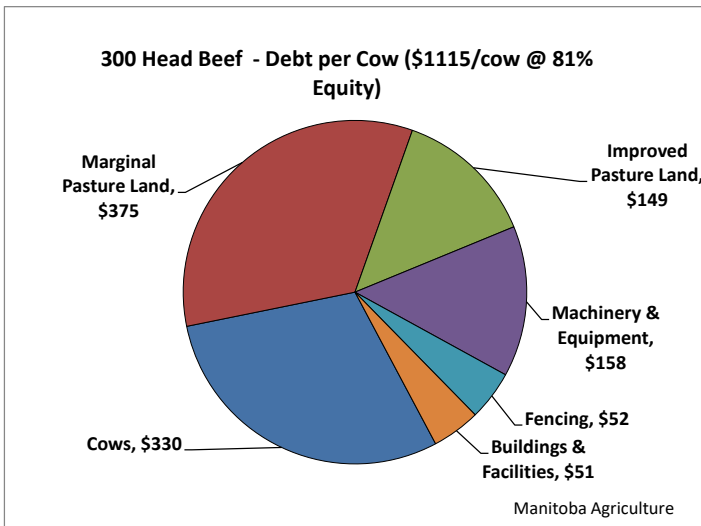
Winter feed is a significant cost for cow calf production. A balanced ration to minimize cost per head per day is an important step in Risk Management Planning.



Herd replacement / breeding and summer pasture are the most significant other cow calf production costs.

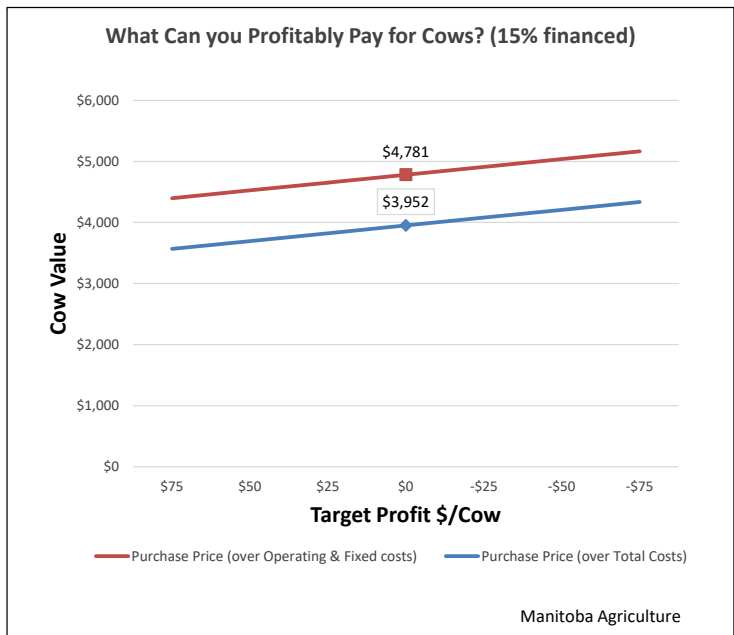
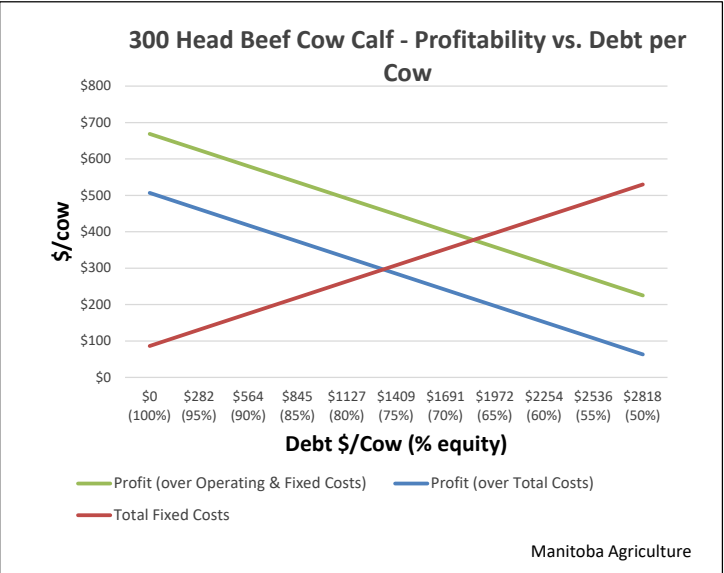


Knowing your total overwinter, winter feed and yardage costs are important in making pasture and extended grazing decisions or determining fair custom feeding rates and are an important step in Risk Management Planning.



Managing total debt per cow is an important step to maintain profitability in a cow calf production enterprise. Total P & I Cost = \$174/cow.

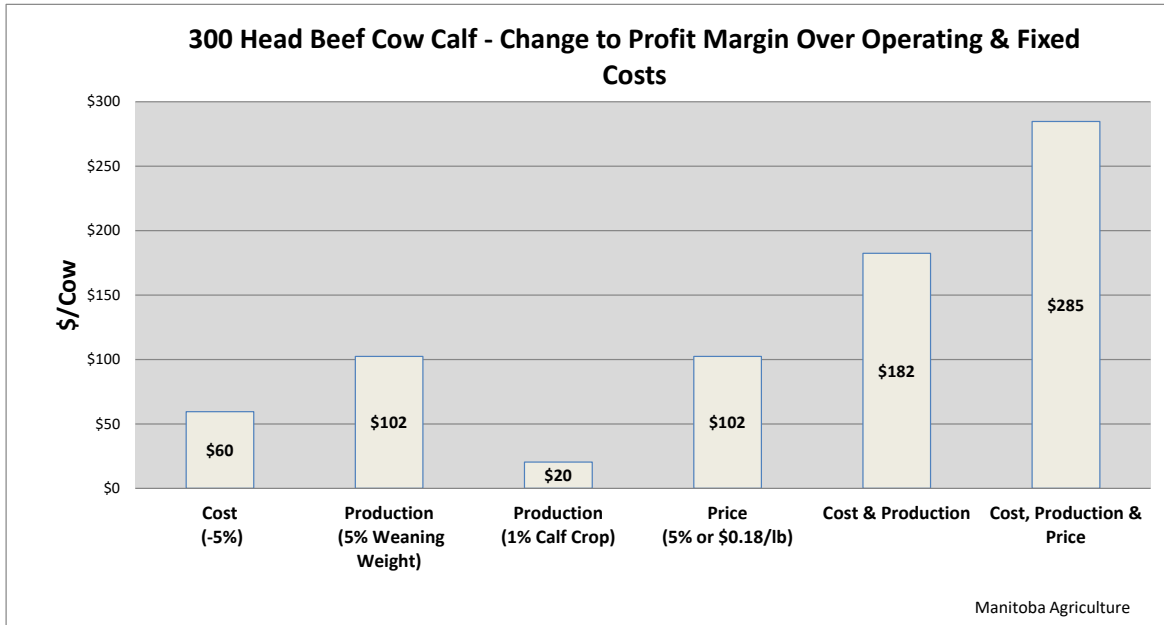
Cow calf profitability is significantly affected by both operating and fixed production costs.



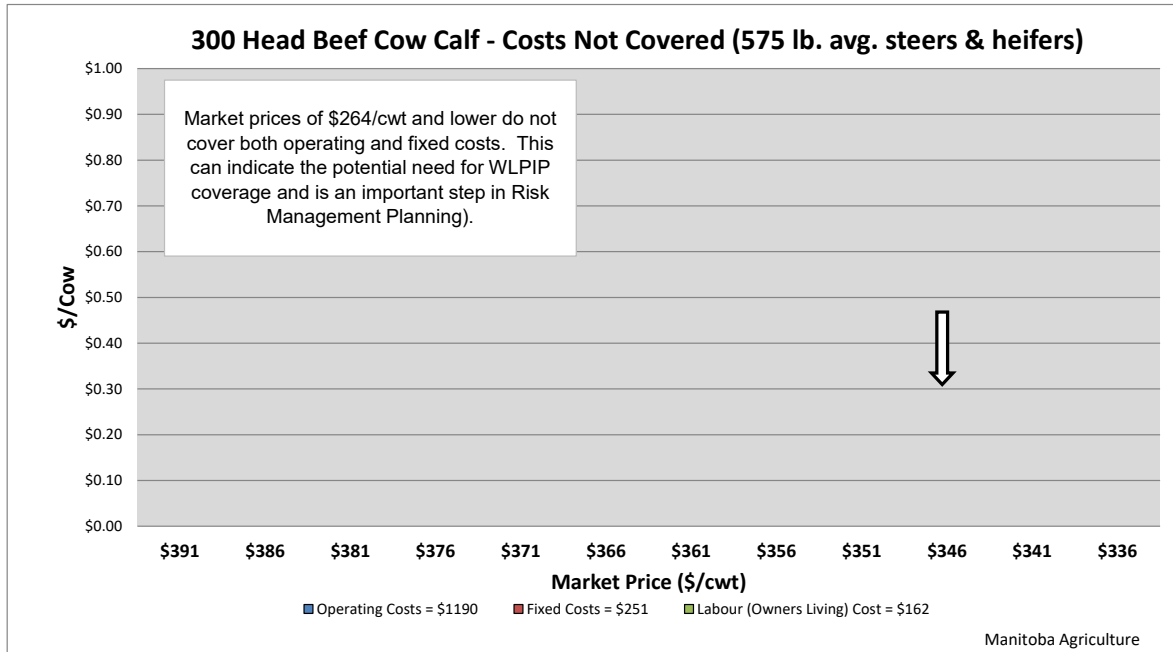
Knowing what you can pay for replacements to maintain your target profitability is an important step in managing beef cow enterprises.

Risk & Sensivity Analysis (Stress Test)

	Percent Change	Per Head	Change from Baseline Value	Change in Profit/Cow	Change in Total Profit
Operating Costs	(5.0%)	\$1,131	(\$60)	\$60	\$17,852
Sale Price (\$ per cwt)	5.0%	\$374	\$18	\$102	\$30,713
Calf Weaning Weight (lbs)	5.0%	604	29	\$102	\$30,713
Calf Crop %	1.0%	96	1	\$20	\$6,143
				\$285	\$85,420



Risk Management Analysis



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Cow-Calf Production Costs - Herd Input

Assumptions

1. This budget outlines the cost of production for a cow-calf operation.
2. Buildings and equipment are valued at new cost.
3. All feed is purchased.
4. Manure removal is contracted out.
5. Replacement heifers are valued at fair market value
6. This budget assumes an average weaning weight of 575 lbs. (steer calves 600 lbs and heifer calves 550 lbs.)

Cow-Calf Production Costs - Herd Profile

	<u>Total</u>
Number of Cows	300 head
Average Cow Weight	1,350 lbs
Number of Bulls	12 bulls
Calf Crop	95 %
Steer Calf Weight	600 lbs
Steer Calf Market Price	\$380 /cwt
Heifer Calf Weight	550 lbs
Heifer Calf Market Price	\$330 /cwt
Average Calf Weight	575 lbs
Weighted Average Calf Market Price	\$356.09 /cwt

Cow-Calf Production Costs - Herd Replacement

Herd Replacement (Cows)

Average Value/Cow	\$2,200 (bred cow to steer calf price ratio = .96)
	(bred cow to steer calf price ratio range is often 1.1 to 1.5 = estimated cow value range of \$2,508 to \$3,420)
Cull Cow Market Price	\$130 /cwt
Cow Mortality Rate	1.25 %

Herd Replacement (Cows)

Replacement Cost/Heifer	\$3,500
Cull Cow Market Value	- \$1,755.00
	(1350lb cow / 100 x \$130/cwt cull price = \$1755.00)
Cow replacement rate (%)	x 12.0
	= \$209.40 /cow

Cow-Calf Production Costs - Breeding

Breeding Costs

Cost Per Cow

Feed for Bulls

Hay	Good Quality (tons/yr)		4.00	
	Hay Price (\$/ton)	x	120	
	Number of Bulls	x	12	
		÷	300	cows = \$19.20

Barley	Per Bull (lbs/day)		7.00	
	Days/Year on Barley	x	120	
	Pounds per bushel	÷	48	
	Barley Price (\$/bu)	x	\$6.00	
	Number of Bulls	x	12	
		÷	300	cows = \$4.20
				= Total \$23.40

Straw for Bulls

Number of Tons/Bull/Year		1.0 tons/bull/year	
Hay Price (\$/ton)	x	70 /ton	
Number of Bulls	x	12 bulls	
	÷	300 cows =	\$2.80

Vet & Medicine for Bulls

Semen Test		\$60.00	
Health Management Costs	+	\$10.00	
Number of Bulls	x	12 bulls	
	÷	300 cows =	\$2.80

Herd Replacement (Bulls)

Original Cost/Bull		\$4,500	
Price Received/Cull Bull	-	\$3,000	
Bull Replacement Rate (%)	x	25	
Number of Bulls	x	12 bulls	
	÷	300 cows =	\$15.00

Investment in Bulls

Original Cost/Bull		\$4,500	
Price Received/Cull Bull	+	\$3,000	
Average - charged on 1/2	÷	2	
Investment Rate	x	4.00	
Number of Bulls	x	12	
	÷	300 cows =	\$6.00

Pasture Costs for Bulls

Pasture Cost (\$/season)		\$165.38 /bull pasture cost	
Number of Bulls	x	12 bulls	
	÷	300 cows =	\$6.62

Other Breeding Alternatives

Artificial Insemination

Cost/Cow or Heifer Exposed		\$0.00	
Number Inseminated	x	0	
	÷	300 cows =	\$0.00

Community Pasture

Cost/Cow or Heifer Exposed		\$0.00	
Number of Cows placed in Pasture		0	
	÷	300 cows =	\$0.00
		= Total	\$56.62

Cow-Calf Production Costs - Facilities

Waterers	Cows per waterer	100	
	Cost per waterer	\$2,000	= Total \$8,000
Windbreak Fence	Feet per Cow	1.5	
	Cost per Foot	\$25	= Total \$11,700
Feedlot Fence/Bunk	Feet per Cow	2.0	
	Cost per Foot	\$15	= Total \$9,360
Calf Shelters	Calves per shelter	50	
	Cost per shelter	\$3,000	= Total \$18,900

Cow-Calf Production Costs - Operating

Veterinary Medicine & Supplies

Calf Medication

Blackleg (8 way vaccine)		\$1.00 /head x 95% calf crop =	\$0.95
Tags (CCIA & ID)		\$4.80 /head x 95% calf crop =	\$4.56

Cow Medication

5-Way fetal protection			\$5.00
Scourguard			\$5.00
Internal/external parasite control, antibiotics, etc.			\$4.00
Vitamin A & D			\$0.50

Herd Health Program

Professional Services

Rate	x	8 hours @	
		\$160.00 /hour	
	÷	300 cows =	\$4.27

Transportation

Total Kilometers (round trip)		80 km	
Rate	x	\$1.00 /km	
Number of yearly visits		2	
	÷	300 cows =	\$0.53
= Total			\$24.81

Other Operating Costs

Straw

Cost (\$/Ton)	\$70.00
Number of Tons/Cow/Year	1.0

Fuel, Oil, Repairs & Maintenance

Machinery Fuel Cost

Tractor with Loader PTO hp		120	
Average HP required	÷	2.5	
Litres fuel / Hour / HP	x	0.1665576	
Tractor Hours Per Day (avg)	x	3.0	
Diesel Fuel Cost / litre	x	\$1.40	
Days on feed	x	195	
Annual fuel cost		\$6,547.71	
	÷	300 cows =	\$21.83

Machinery repair & maintenance

Machinery capital cost		\$237,500	
Machinery Repair (% of investment cost)	x	1.20 %	
Oil, repairs & maintenance	=	\$2,850.00	
	÷	300 cows =	\$9.50

Building repair & maintenance

Building capital cost		\$101,710	
Building maintenance (% of inv.cost)	x	2.20	
Repairs & maintenance	=	\$2,237.62	
	÷	300 cows =	\$7.46
= Total			\$38.78

Other Operating Costs

Utilities

Hydro	Rate (\$/kWh)	\$0.09324	
	25 kWh per cow	=	\$699.30
	4 1000 watt waterer	=	\$1,544.05
	Total Hydro	=	\$2,243.35
		÷	300 cows = \$7.48
Telephone		\$600.00	
		÷	300 cows = \$2.00
= Total			\$9.48

Marketing & Transportation

Trucking

Calves: Number marketed per year		285	
Truck Capacity (lbs/load)		54,000	
Number of head per load - calves		94	
Loads	=	4.00	
Distance (miles)	x	75	
Rate / Loaded Mile	x	\$7.00	
	÷	300 cows =	\$7.00

Cull cows:	Number per year		36.00		
	Number cows died	-	4.00		
	Number of head per load - cull cows		40		
	Loads	=	1.00		
	Distance (miles)	x	75.00		
	Rate / Loaded Mile	x	\$7.00		
		÷	300.00	cows =	\$1.75
MBP Levy, selling commission & insurance					
Calves	MBP/NCO Levy (\$/Head)	+	\$5.50		
	WLPIP Insurance Premium (\$/cwt)		\$0.00		
	Average Calf Weight (cwt)	x	5.75		
+	WLPIP Insurance Premium	=	\$0.00		
	Insurance per Head	+	\$1.75		
	Commission on Calves		\$20.00		
	Number marketed per year	x	285		
		÷	300.00	cows =	\$25.89
Cull Cows	MBP/NCO Levy (\$/Head)		\$5.50		
	Insurance per Head	+	\$1.75		
	Commission on Cows		\$22.00		
	Number marketed per year	x	32		
		±	300.00	cows =	\$3.12
				= Total	\$37.76
Death Loss					<u>Cost Per Cow</u>
	Cow investment (\$/Head)	x	\$2,200		
	Cow Mortality Rate (%)	x	1.25	=	\$27.50
Manure Removal					<u>Cost Per Cow</u>
	Number winter feeding days		195		
	Non-confined winter feeding - feed delivered	-	130		
	Non-confined winter feeding - bale grazing	=	0		
	Days confined winter feeding	=	65		
	Manure volume produced (m ³ /cow/day)	x	0.034		
	Manure volume (m ³)	=	2.21		
	Manure volume shrinkage (%)	x	75		
	Conversion - yd ³ per m ³	x	1.30795		
	Manure removal & application (\$/yd ³)	x	\$15.00	=	\$10.84
Insurance					<u>Cost Per Cow</u>
	Cow Investment (\$/Head)		\$2,200		
	Cost per \$100 Livestock	x	\$0.45		
		÷	100.00	=	\$9.90
	Buildings & Equipment Investment		\$339,210		
	Cost per \$100 Buildings	x	\$0.40		
		÷	100.00		
		÷	300.00	cows =	\$4.52
	Additional coverage for liability		\$49.00		
		÷	300.00	cows =	\$0.16
				= Total	\$14.58
Miscellaneous					<u>Cost Per Cow</u>
	Total office expenses		\$1,000		
		÷	300.00	cows =	\$3.33
Operating Interest					
	Subtotal operating costs		\$1,138.86		
	Average - charged on 1/2	÷	2.00		
	Operating Interest Rate	x	9.00		
				= Total	\$51.25
Labour Costs					<u>Cost Per Cow</u>
	Labour Rate (\$/hour)		\$27.00		
	Hired - Labour Hours/Cow/Year		2.00	=	\$54.00
	Owner - Labour Hours/Cow/Year		6.00	=	\$162.00
				= Total	\$216.00

Annual Days on Pasture and Winter Feeding

Total Days Per Year		365	
Pasture Grazing	minus	135 days	4.5 months
Extended Grazing	minus	35 days	
Total Winter Feeding	(see Ration Worksheet for more detail)	=	195 days
Non-confined winter feeding (feed delivered to pasture)	minus	130 days	
Non-confined winter feeding (bale grazing)	minus	0 days	
Confined winter feeding - feed delivered	=	65 days	
			365 Total Days

Pasture Options - Input

	Marginal Pasture	Improved Pasture	Crown Lands	Community Pasture	Rented Pasture
Land Base					
Number of cows pastured/season	300	300	300	300	300
Number of cows/quarter	32	94	12	-	32
Number of pasture acres/head	5.0	1.7	13.3	-	5.0
Total Acres Required	1500	511	4000	-	1500
Rental Rate (\$/quarter)	-	-	\$662	-	\$4,500
Rate (\$/cow/day)	-	-	-	\$0.85	-
Rate (\$/calf/season)	-	-	-	\$50.00	-
Pasture Land Value					
(\$/acre, excl. fence, water, facilities)		\$750	\$1,750	-	-
Owned Land Equity	75%				
Land Financed	25%				
Land Opportunity Cost (Investment Rate)	0.00%				
Land cost (\$/acre)					
Finance Rate & Term	8.000%	25 years			
Principle & Interest Cost	\$17.56	\$40.98	-	-	-
Owned Land Opportunity Cost	\$0.00	\$0.00	-	-	-
Total Cost (\$/acre)	\$17.56	\$40.98	-	-	-

Pasture Fencing - Input

	Fence Cost Per Mile			Total
	Materials	Labour	Equipment	
Barbed Wire (4 strand)	\$4,812	\$1,118	\$1,514	\$7,444
Electric Wire (4 strand)	\$2,389	\$500	\$635	\$3,524
Electric Wire (2 strand)	\$2,042	\$412	\$561	\$3,015
Electric Wire (1 strand)	\$1,730	\$370	\$523	\$2,623
Page Wire (w/optional top wire)	\$9,139	\$1,974	\$2,527	\$13,640
	Marginal Pasture	Improved Pasture	Crown Lands	
	Fence Miles per Quarter (160 ac)			
Barbed Wire (4 strand)	2.00	0.00	1.00	
Electric Wire (4 strand)	0.00	0.00	0.00	
Electric Wire (2 strand)	0.00	0.00	0.00	
Electric Wire (1 strand)	0.00	4.00	0.00	
Page Wire (w/optional top wire)	0.00	0.00	0.00	
	Cost Per Quarter (160 acres)			
Barbed Wire (4 strand)	\$14,888	\$0	\$7,444	
Electric Wire (4 strand)	\$0	\$0	\$0	
Electric Wire (2 strand)	\$0	\$0	\$0	
Electric Wire (1 strand)	\$0	\$10,492	\$0	
Page Wire (w/optional top wire)	\$0	\$0	\$0	
	\$14,888	\$10,492	\$7,444	

Total Fence Cost		\$139,575	\$33,509	\$186,100
Total Fence Investment (\$/acre)		\$93.00	\$66.00	\$47.00
Residual Value (End of Useful Life)		10%	10%	10%
Useful Life (years)	20			
Owned Fence Equity	75%			
Fence Financed	25%			
Fencing Cost (\$/acre)				
Finance Rate & Term	8.000%	7 years		
Principle & Interest Cost		\$4.47	\$3.17	\$2.26
Fencing Depreciation Cost		\$4.19	\$2.97	\$2.12
Owned Fence Opportunity Cost		\$0.00	\$0.00	\$0.00
Total Cost		\$8.65	\$6.14	\$4.37

Fence Maintenance (% of investment cost) **2.00%**

Pasture Options - Cost Summary

	Marginal Pasture	Improved Pasture	Crown Lands	Community Pasture	Rented Pasture
A. Operating Costs					
Land Development (\$/acre)	\$0.00	\$18.74	-	-	-
Fertilizer - Annual (\$/acre)	\$0.00	\$33.53	-	-	-
Herbicide (\$/acre)	\$1.00	\$1.00	\$0.00	-	\$0.00
Fence Maintenance (\$/acre)	\$1.86	\$1.32	\$0.94	-	\$0.00
Pasture Rental	-	-	\$4.14	-	\$28.13
Taxes (\$/acre)	\$4.00	\$8.00	-	-	-
Miscellaneous (\$/acre)	\$0.00	\$0.00	\$0.00	-	\$0.00
Total Operating Costs (\$/acre)	\$6.86	\$62.59	\$5.08	-	\$28.13
B. Fixed Costs					
Land (\$/acre)	\$17.56	\$40.98	-	-	-
Fencing (\$/acre)	\$8.65	\$6.14	\$4.37	-	-
Total Total Fixed Costs (\$/acre)	\$26.22	\$47.12	\$4.37	-	\$0.00
Total Operating and Fixed (\$/acre)	\$33.08	\$109.71	\$9.45	-	\$28.13
Total Operating and Fixed (\$/year)	\$49,613	\$56,064	\$37,797	\$48,675	\$42,188
Cost per cow (135 days pasture)	\$165.38	\$186.75	\$125.99	\$162.25	\$140.63
Cost per cow per day (135 days pasture)	\$1.23	\$1.38	\$0.93	\$1.20	\$1.04

Pasture Options - Carrying Capacity and AUM Analysis

Carrying Capacity					
Number of head pastured/acre	0.200	0.587	0.08	-	0.20
Metabolic Animal Unit Value	1.25	1.25	1.25	1.25	1.25
AUM Analysis					
Total Animal Unit Months (AUM's)	1688	1688	1688	1688	1688
Total AUM's - Available Per Acre	1.13	3.30	0.42	-	1.13
Pasture Investment per AUM	\$666	\$530	-	-	-
Total Pasture Cost Per AUM	\$29.39	\$33.21	\$22.39	\$28.84	\$24.99
Pasture Efficiency Analysis					
Pounds liveweight per acre	270	792	108	-	270
Pasture Investment per Cow on Pasture	\$3,750	\$2,981	-	-	-

Pasture Options - Usage Planner

	Marginal Pasture	Improved Pasture	Crown Lands	Community Pasture	Rented Pasture	Total
Planned number of cows	120	60	0	0	120	300
Acres Required	600	102	0	-	600	1,302

Winter Feed Costs & Requirements Worksheet

Total Winter Feeding = 195 days

Enter your days on feed for each selected ration number in the "blue" numbers in the "gray" shaded area

Pre Calving - Cows														
	Ration Number			#1	#2	#3	#4	#5	#6	#7	#8	#9	Total lbs /cow	Total Cost /cow ²
	Days on Feed			0	0	135	0	0	0	0	0	0		
Feed Type	\$/unit	lbs/Unit	\$/lb	Ration - Feed Per Day (lbs based on 1400 lb cow)										
Alfalfa Hay	\$160.00	2,000	0.080	0	0	0	0	0	0	0	0	0	0	\$0.00
Alfalfa Grass Hay	\$120.00	2,000	0.060	35	0	0	0	16	0	10	0	0	0	\$0.00
Grass Hay	\$80.00	2,000	0.040	0	0	0	0	0	0	0	0	0	0	\$0.00
Barley Straw	\$70.00	2,000	0.035	0	17	19	23	0	23	15	23	0	2,473	\$86.57
Barley Greenfeed	\$120.00	2,000	0.060	0	0	0	0	19	0	0	0	0	0	\$0.00
Corn Silage	\$45.00	2,000	0.023	0	0	47	0	0	0	32	0	0	6,118	\$137.66
Barley Silage	\$55.00	2,000	0.028	0	48	0	0	0	0	0	0	0	0	\$0.00
Barley Grain	\$6.00	48	0.125	0	0	0	11	0	10	0	0	0	0	\$0.00
32% Feedlot Suppl.	\$550	2,205	0.249	0	0.5	0.5	1	0	0	0	0	0	65	\$16.24
32% Liquid Suppl.	\$475	2,205	0.215	0	0	0	0	0	2.9	0	0	0	0	\$0.00
20% Grain Pellets	\$350	2,205	0.159	0	0	0	0	0	0	0	14	0	0	\$0.00
1:1 Mineral	\$50.00	55	0.909	0.12	0	0.00	0	0	0	0	0	0	0	\$0.00
2:1 Mineral	\$50.00	55	0.909	0	0.06	0.06	0.06	0.12	0.2	0.2	0.06	0	8	\$7.10
Limestone	\$20.00	55	0.364	0	0	0.00	0	0	0.2	0	0.2	0	0	\$0.00
Blue Salt	\$10.00	55	0.182	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0	9	\$1.66
\$/head/day				\$2.22	\$2.11	\$1.91	\$2.50	\$2.22	\$2.95	\$2.04	\$3.17	\$0.00		\$249.23

Post Calving - Cows														
	Ration Number			#1	#2	#3	#4	#5	#6	#7	#8	#9	Total lbs /cow	Total Cost /cow ²
	Days on Feed			0	0	60	0	0	0	0	0	0		
Feed Type	\$/unit	lbs/Unit	\$/lb	Ration - Feed Per Day (lbs based on 1400 lb cow)										
Alfalfa Hay	\$160.00	2,000	0.080	0	0	0	0	0	0	0	0	0	0	\$0.00
Alfalfa Grass Hay	\$120.00	2,000	0.060	44	0	0	0	20	0	20	15	0	0	\$0.00
Grass Hay	\$80.00	2,000	0.040	0	0	0	0	0	0	0	0	0	0	\$0.00
Barley Straw	\$70.00	2,000	0.035	0	12	12	24	0	23	8	11	0	694	\$24.30
Barley Greenfeed	\$120.00	2,000	0.060	0	0	0	0	16	0	0	0	0	0	\$0.00
Corn Silage	\$45.00	2,000	0.023	0	0	48	0	0	0	40	0	0	2,777	\$62.49
Barley Silage	\$55.00	2,000	0.028	0	45	0	0	0	0	0	0	0	0	\$0.00
Barley Grain	\$6.00	48	0.125	5	12	7	15	5	15	0	0	0	405	\$50.63
32% Feedlot Suppl.	\$550	2,205	0.249	0	0	2	2.5	0	0	0	0	0	116	\$28.86
32% Liquid Suppl.	\$475	2,205	0.215	0	0	0	0	0	3.5	0	0	0	0	\$0.00
20% Grain Pellets	\$350	2,205	0.159	0	0	0	0	0	0	0	15	0	0	\$0.00
1:1 Mineral	\$50.00	55	0.909	0.18	0	0.00	0	0	0	0	0	0	0	\$0.00
2:1 Mineral	\$50.00	55	0.909	0	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0	10	\$9.47
Limestone	\$20.00	55	0.364	0	0.1	0.10	0.1	0	0.3	0	0.1	0	6	\$2.10
Blue Salt	\$10.00	55	0.182	0.1	0.1	0.10	0.1	0.1	0.1	0.1	0.1	0	6	\$1.05
\$/head/day				\$3.45	\$3.38	\$3.09	\$3.56	\$2.97	\$3.72	\$2.56	\$3.88	\$0.00		\$178.90

Winter Feed Summary			
	Total Days on Feed ¹	Average Cost/Day	Feed Cost per Cow ²
Pre Calving - Cows	135	\$1.85	\$249.23
Post Calving - Cows	60	\$2.98	\$178.90
	195	\$2.20	\$428.12

1. Total Days on Feed Must = 195 Days (as calculated on Input worksheet)

2. Feed Cost Per Cow Based on 1350 lb Cow

Note: When selecting silage based feed rations, please input all required equipment capital costs on the 'Input' worksheet associated with feeding and feed delivery for silage.

Note: The suggested feed rations above were formulated using Cowbytes Beef Ration Balancer software with no included allowance for wastage during feeding. Feed ration quantity and costs should be adjusted accordingly. If you need help with a ration, contact a Manitoba Agriculture Livestock Specialist.

Fixed Costs

Cows			Machinery & Equipment		
Cow value (\$/head)	\$2,200		Total Investment (\$/cow)	\$792	
Owned Cow Equity	85%		Residual Value (End of Useful Life)	20%	
Cows Financed (\$330 per head)	15%		Useful Life (years)	10	
Cow Opportunity Cost (Investment Rate)	0.00%		Owned Machinery Equity	80%	
Cow cost (\$/head)			Machinery Financed (\$158 per head)	20%	
Finance Rate & Term	8.500%	7 Years	Machinery Opportunity Cost (Investment Rate)	0.00%	
Principle & Interest Cost	\$64.47		Machinery & Equipment Cost (\$/cow)		
Owned Cows Opportunity Cost	\$0.00		Finance Rate & Term	8.500%	7 Years
Total Cost	\$64.47		Principle & Interest Cost		\$30.95
Marginal Pasture Land			Machinery Depreciation Cost		\$63.36
Average Land value (\$/acre)	\$750		Owned Machinery Opportunity Cost		\$0.00
Pasture acres	600		Total Cost		\$94.31
Owned Land Equity	75%		Buildings & Facilities		
Land Financed (\$188 per acre)	25%		Total Investment (\$/cow)	\$339	
Land Opportunity Cost (Investment Rate)	0.00%		Residual Value (End of Useful Life)	20%	
Land cost (\$/acre)			Useful Life (years)	20	
Finance Rate & Term	8.000%	25 Years	Owned Building Equity	85%	
Principle & Interest Cost	\$17.56		Building Financed (\$51 per head)	15%	
Owned Land Opportunity Cost	\$0.00		Building Opportunity Cost (Investment Rate)	0.00%	
Total Cost	\$17.56		Building & Water System Cost (\$/cow)		
Improved Pasture Land			Finance Rate & Term	8.500%	7 Years
Average Land value (\$/acre)	\$1,750		Principle & Interest Cost		\$9.93
Pasture acres	102		Building Depreciation Cost		\$13.56
Owned Land Equity	75%		Owned Building Opportunity Cost		\$0.00
Land Financed (\$438 per acre)	25%		Total Cost		\$23.49
Land Opportunity Cost (Investment Rate)	0.00%		Fencing		
Land cost (\$/acre)			Total Investment (\$/cow)	\$208	
Finance Rate & Term	8.000%	25 Years	Residual Value (End of Useful Life)	10%	
Principle & Interest Cost	\$40.98		Useful Life (years)	20	
Owned Land Opportunity Cost	\$0.00		Owned Fence Equity	75%	
Total Cost	\$40.98		Fence Financed (\$52 per head)	25%	
Total Principle & Interest Cost (\$/cow)			Fence Opportunity Cost (Investment Rate)	0.00%	
Total Principle & Interest Cost (300 cows)			Fencing Cost (\$/cow)		
			Finance Rate & Term	8.000%	7
			Principle & Interest Cost		\$10.01
			Fence Depreciation Cost		\$9.38
			Owned Fence Opportunity Cost		\$0.00
			Total Cost		\$19.39

Capital Value

	Market			Cow-calf				Market			Cow-calf		
	Value	Usage %	Allocation	Value	Usage %	Allocation		Value	Usage %	Allocation	Value	Usage %	Allocation
Buildings & Facilities							Machinery & Equipment						
Windbreak Fence	\$11,700	100%	\$11,700	Miscellaneous Machinery	\$10,000	100%	\$10,000						
Feedlot Fence	\$9,360	100%	\$9,360	Tractor & Loader	\$175,000	50%	\$87,500						
Calf Shelters	\$18,900	100%	\$18,900	Bale Shredder	\$25,000	100%	\$25,000						
Handling Facilities	\$15,000	100%	\$15,000	Tractor & Feed Wagon (silage)	\$60,000	100%	\$60,000						
Calving Facility	\$12,500	100%	\$12,500	Stock Trailer	\$25,000	100%	\$25,000						
Waterers	\$8,000	100%	\$8,000	Truck	\$60,000	50%	\$30,000						
Pasture Watering System	\$4,000	100%	\$4,000		\$0	100%	\$0						
Pasture Water Source	\$3,000	100%	\$3,000		\$0	100%	\$0						
Gates	\$1,450	100%	\$1,450		\$0	100%	\$0						
Feeders	\$2,400	100%	\$2,400		\$0	100%	\$0						
Well & Pressure System	\$8,000	100%	\$8,000		\$0	100%	\$0						
Hydro (6 poles @ \$400)	\$2,400	100%	\$2,400		\$0	100%	\$0						
Storage Bins	\$5,000	100%	\$5,000		\$0	100%	\$0						
	\$0	100%	\$0		\$0	100%	\$0						
	\$0	100%	\$0		\$0	100%	\$0						
	\$0	0%	\$0		\$0	100%	\$0						
Total Inv. = \$101,710 (\$339/cow)							Total Inv. = \$237,500 (\$792/cow)						

Extended Grazing Costs & Requirements Worksheet

Extended Grazing Days	35
Number of Cows	300
Number of Cow Grazing Days	10,500

Extended Grazing Options - Costs

	<u>Corn</u> <u>Grazing</u>	<u>Stockpiled</u> <u>Forage</u>	<u>Swath</u> <u>Grazing</u>	<u>Crop</u> <u>Residue</u>
Standing Forage Cost (\$/lb)	n/a	\$0.025	n/a	\$0.015
Input Costs (\$/acre)				
Seed	\$96.00		\$32.00	
Fertilizer (incl. applic.)	\$209.00		\$114.00	
Herbicide	\$16.00		\$16.00	
Custom tillage	\$12.00		\$12.00	
Custom seeding	\$25.00		\$25.00	
Custom spraying	\$9.00		\$9.00	
Miscellaneous	\$7.75		\$7.75	
Land taxes	\$10.00		\$10.00	
Land Costs	\$71.26		\$71.26	
<u>Labour</u>	\$20.25		\$20.25	
Subtotal	\$476.26	\$50.00	\$317.26	\$7.50
Fencing Costs				
Estimated miles of fence required	0.350	2.950	0.588	11.550
Fence Investment Cost/acre	\$1.31	\$1.31	\$1.31	\$1.31
Fence Depreciation Cost/acre	\$1.64	\$1.64	\$1.64	\$1.64
Total cost per acre	\$479.21	\$52.95	\$320.21	\$10.45

Extended Grazing Options - Yields & Cost Comparison

	15.00	1.00	7.50	0.25
Grazing Yield (wet tons/acre)				
% moisture	50	10	40	8
Yield (tons dry matter/acre)	7.5	0.9	4.5	0.23
Total # cow grazing days/acre	370.4	44.4	222.2	11.4
Acres Req'd for Option	28	236	47	924
Total Extended Grazing Cost	\$13,417.90	\$12,496.41	\$15,049.91	\$9,656.61
Cost per cow	\$44.73	\$41.65	\$50.17	\$32.19
Cost/cow/day (based on 35 days)	\$1.28	\$1.19	\$1.43	\$0.92

Extended Grazing - Usage Planner

	<u>Corn</u> <u>Grazing</u>	<u>Stockpiled</u> <u>Forage</u>	<u>Swath</u> <u>Grazing</u>	<u>Crop</u> <u>Residue</u>	<u>Total</u>
Planned extended grazing days	0	35	0	0	35
Cost per cow	\$0.00	\$41.65	\$0.00	\$0.00	\$41.65
Cost/cow/day (based on 35 days)					\$1.19

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.

Assumptions

1. This budget outlines the cost of production for a cow-calf operation with 300 cows, 12 bulls and 95% calf crop weaned.
2. Building and equipment are valued at new cost.
3. Feed cost is a combined value of market price and on-farm production costs.
4. Manure removal is contracted out.
5. Replacement heifers are valued at fair market value.
6. This budget assumes an average weaning weight of 575 lbs. (steer calves 600 lbs and heifer calves 550 lbs.)

Capital and Debt Summary:

<u>Capital Summary</u>	<u>\$/cow</u>	<u>Total</u>	<u>Debt Summary</u>	<u>\$/cow</u>	<u>Total</u>
Breeding Herd Value	\$2,380	\$714,000	Cows	\$330	\$99,000
Marginal Pasture Land	\$1,500	\$450,000	Marginal Pasture Land	\$375	\$112,500
Improved Pasture Land	\$596	\$178,850	Improved Pasture Land	\$149	\$44,713
Machinery & Equipment	\$792	\$237,500	Machinery & Equipment	\$158	\$47,520
Fencing	\$208	\$62,532	Fencing	\$52	\$15,633
Buildings & Facilities	\$339	\$101,710	Buildings & Facilities	\$51	\$15,255
Total Capital Investment	\$5,815	\$1,744,592	Total Debt	\$1,115	\$334,620
			Debt/EBITDAR ratio = 1.59:1		
			Cow Calf Equity	81%	

Land Use Efficiency and Feed Security Analysis:

		<u>Acres/cow</u>	<u>Total Acres</u>
Pasture (Marginal, Improved, Crown Land and Rented Pasture)	135 Days	4.34	1,302
Extended Grazing (Corn, Stockpiled, Swath and Crop Residue)	35 Days	0.79	236
Planned forage & feed waste amount	10%	1,500 pound bales	
Alfalfa Hay	0 Total Tons @	3.50 tons/acre (4.7 bales/ac)	0.00
Alfalfa Grass Hay	0 Total Tons @	2.79 tons/acre (3.7 bales/ac)	0.00
Grass Hay	0 Total Tons @	2.00 tons/acre (2.7 bales/ac)	0.00
Barley Greenfeed	0 Total Tons @	2.83 tons/acre (3.8 bales/ac)	0.00
Corn Silage	1,468 Total Tons @	15.0 tons/acre	0.33
Barley Silage	0 Total Tons @	7.5 tons/acre	0.00
Barley Grain	2,784 Total bu @	78 bu/acre	0.12
		5.57	1,672

Profitability and Breakeven Analysis:

Gross Revenue = calf weight (lbs) x \$/lb x % calf crop (eg. 575 x \$3.56/lb x 95% = \$1945.14)
 Return on Investment (ROI) = (Gross Revenue - Total Cost) / Total Cost
 (eg. (\$1,945.14 - \$1,602.86) / \$1602.86 = 21.4%)
 Return on Asset (ROA) = (Margin Over Operating - Owners Labour - Building Depreciation - Machinery Depreciation - Fence Depreciation) / ((Building, Machinery & Equipment Investment + Pasture Investment + Breeding Herd Investment) / Herd Size)
 (eg. (\$755.03 - \$162.00 - \$13.56 - \$63.36 - \$9.38) / ((\$401,742 + \$628,850 + \$714,000) / 300) = 8.7%)
 Operating Expense Ratio = (operating cost ÷ gross revenue) x 100
 (eg. (\$1190.11 ÷ \$1945.14) x 100 = 61%)
 Breakeven Price \$/cwt = Cost ÷ % calf crop ÷ calf weight cwt (eg. \$1602.86 ÷ 95% ÷ 5.75 = \$293)

Cost Summary:

Summer Grazing Cost Per Cow Per Day = pasture cost ÷ days (eg. \$159.75 ÷ 135 = \$1.18)
 Extended Grazing Cost Per Cow Per Day = grazing cost ÷ days (eg. \$41.65 ÷ 35 = \$1.19)
 Winter Feed Cost Per Cow Per Day = feed cost ÷ days (eg. \$451.52 ÷ 195 = \$2.32)
 Yardage Cost Per Cow Per Day = (\$72.80 straw + \$38.78 fuel & repair + \$4.52 building insurance + \$9.48 utilities + \$10.84 manure removal + \$13.56 building depreciation+ \$63.36 machinery depreciation + \$9.93 building investment + \$30.95 machinery investment + \$32.69 operating interest + \$2.10 misc. + \$135.00 labour) ÷ 230 days = \$1.837

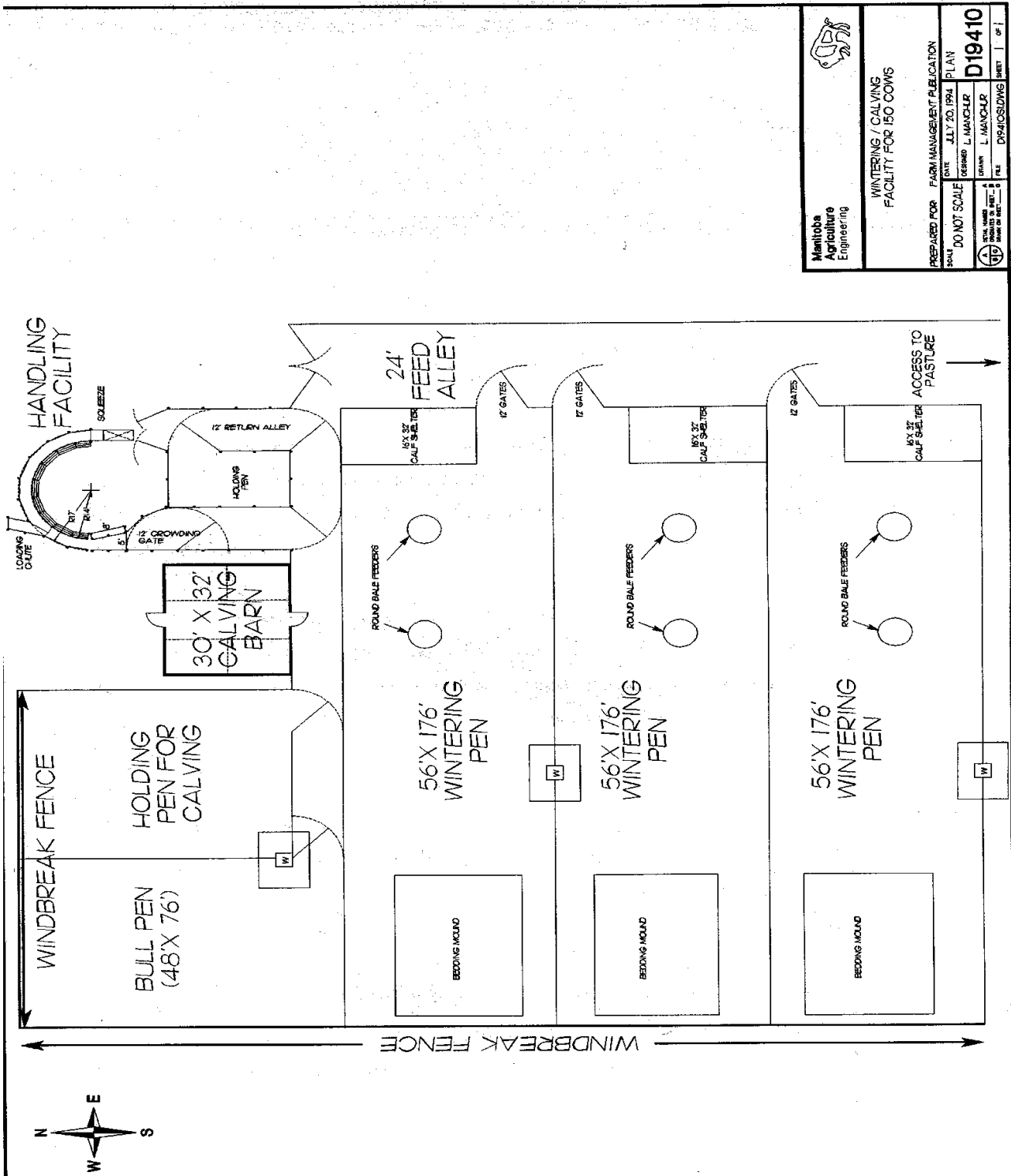
September, 2023

Contact Us


For more information, contact a Farm Management Specialist.

- manitoba.ca/agriculture
- mbfarmbusiness@gov.mb.ca
- 1-844-769-6224

Cow-Calf Operating Facilities



Manitoba Agriculture Engineering



WINTERING / CALVING FACILITY FOR 150 COWS

PREPARED FOR: FARM MANAGEMENT APPLICATION

DATE: JULY 20, 1994

SCALE: DO NOT SCALE

DRAWN BY: L. MANCHUP

CHECKED BY: L. MANCHUP

FILE: D19410

SHEET: 1 OF 1

Contact us

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