

Representative Economic Budget for Northeast Nebraska – 50 Head Cow Herd

Updated Dec. 2021

Background

In Northeast Nebraska, owning a small cow herd of 50 cows with four bulls is typical for many farmers in the area. Many own or have access to pasture ground and produce row crops with grains and residue that can be utilized in a small cow-calf operation.

This northeast Nebraska cow calf budget was compiled from discussions and information provided by a roundtable group of producers from the area. This budget should only be used as a guide as it is meant to represent a common cow calf production system for producers in the area. The cow herd enterprise represents approximately 25 percent of the overall farm operation. Corn and soybean crop farming and off farm jobs provide other income for these cow-calf producers.

It is important to note that feed and hay produced on owned ground, along with pasture and stalk rent expenses are considered separate enterprises, therefore in the accompanying budget, feed, hay, pasture, and stalks are included as cash feed expenses, valued at current market value. Individual producers may enter an opportunity cost for their land use for the cow-calf enterprise in lieu of cash rental expenses in their budgets.

Livestock Management Practices

Northeast Nebraska cow-calf producers generally calve in the spring of each year. Calves are sold after being weaned in November or December of their birth year. The weaning rate per exposed cow is figured at 85 percent. The cull rate for cows is typically 15 percent each year, which is one of the highest cull rates in Nebraska due to weather related factors. The typical practice for these operations is to purchase bred heifers to replace culled cows. Bulls are culled every four to five years. *Chart 1: Cow calf production flowchart provides production numbers – page 3.*

For most northeast Nebraska farms of this size, calves are sold soon after weaning in the November and December timeframe at a 500 pound average per head. Producers typically utilize creep feeding for the calves beginning 60 to 80 days prior to weaning.

Cow-calf pairs are typically on pasture for five months from May to September. Current pasture rental rates are \$75 to \$100 per acre. In October and November the herd is fed hay and protein supplement, then they go on corn stalks (crop residue) until late February. If stalks aren't utilized in the fields, stalks are baled. With many feedlots in the area, they utilize the stalk bales as wind breaks in the winter and supplemental feeding in late winter or early spring.

In the March and April timeframe, cows are fed hay again. Feed for the bulls typically mimics that of the cows, however when the cows are on stalks, bulls are on feed and supplement.

Machinery, Equipment and Facilities

Basic equipment owned and utilized for this size cow herd is often an ATV, a pickup, a small horsepower tractor or utilization of a small percentage of a larger tractor, a stock trailer, a portable chute, and fence panels. The value of machinery and equipment allocated to the cow-calf enterprise is shown in the budget. Annual repair expenses for these assets are shown in the budget as fixed cash costs. Depreciation and opportunity costs of ownership are noted in the budget as non-cash costs. Facilities for the cow-calf enterprise would typically include an older wooden barn and corral. Annual repair expenses for fixed assets are shown in the budget as fixed cash costs. Depreciation and opportunity costs of ownership are noted in the budget as non-cash costs.

Non-Feed Input Costs

Non-feed input costs can be entered into the budget on a “per animal” or a whole herd basis. In this representative budget, these costs were entered on a per animal basis and include labor, fuel, veterinary and medical cost, and marketing costs. Labor, fuel, and veterinary and medical costs are allocated to each animal category based on net increase in value during the production year. Marketing costs are broken down by each animal category of the herd and allocated accordingly. For example, cull bull marketing of \$35 per animal is included on the bull budget page and the system budget which is a summary of all projected revenue and expenses at the end of the budget report. The cost of direct marketing and the costs per head to sell thru a nearby sale barn can vary tremendously. Marketing expense include the sales commission, transportation and other costs to market. In this budget, both a commission and charge for hauling the cattle to sale are figured into marketing expense.

Other Depreciation, Interest and Overhead Costs

Depreciation for purchased replacement heifers and bulls is figured in the difference of their cost of purchase to their sale value when culled. These figures are included in the breeding and bull budget pages and are carried over into the total system budget page as income when sold and expense when purchased. Depreciation expense for tax purposes would be handled differently, in consultation with a tax accountant.

Opportunity interest of 3 percent is figured on the value of investment total in the livestock herd. This is an economic cost reflecting what rate of return could be earned if the herd was sold and the money invested in its most profitable alternative use.

Overhead expenses include the farm’s annual insurance premium and professional fees. Real estate value and taxes are not included in this example because, as stated previously, rental costs are paid for all hay, stalks and pasture. Therefore, this budget is making the assumption that no ground utilized for the cow calf operation is owned by the cow calf enterprise. Real estate tax on the facilities is included in the budget and property tax is included in other expenses for the vehicles and equipment. An annual management charge and other expenses that pertain to the cow calf herd may be entered but are left blank in this representative budget.

Prepared by:

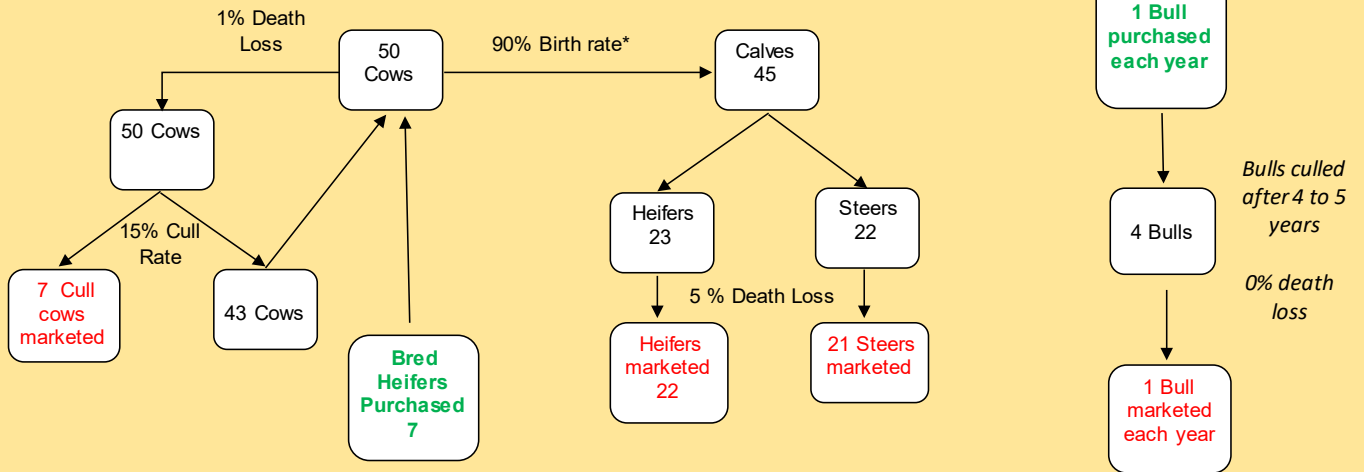
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Chart 1: Cow-calf production flowchart, 50 cow herd - Northeast Nebraska



* 85% weaning rate per exposed cow. 100% purchased heifers as replacements.

50 Head Cow Herd Livestock Budget Worksheet pages attached include:

- Budget Input sheets
- Bull budget
- Replacement budget
- Breeding herd cash budget
- Cow-calf System Budget report (summarizes all budget information)



Cow Herd System Budget

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This budgeting workbook is designed to provide analysis of the components of a beef production system. This template provides an example 50 head cow herd based in northeast Nebraska. It may be modified for current values, various herd sizes, management practices, and locations.

Budget template designed by Roger Wilson, retired Farm & Ranch Management Analyst.



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Budget Inputs

Northeast Nebraska Dec. 2021

Breeding Herd				
Breeding Females	Herd size	It is assumed that herd size remains stationary so replacements will equal cow culls and cow deaths. If too few replacements are purchased, the worksheet automatically retains heifers.	50	Cows
	Average Cow Value		1,400	\$ / head
	Cows Culled per Year		7	Cows
	Cow Deaths per year		0	head
	Number of Replacements Needed		7	
	Estimated Weaning Rate		87	percent
	Extra Heifers Retained for Breeding that Will Not Be Used as Replacements			head
	Culled Replacement Heifer Weight When Sold			pounds
	Culled Replacement Heifer Selling Price			\$ / cwt
	Cost of Marketing Culled Replacement Heifers			\$ / head
	Replacement Females Purchased	(<=7)	7	head
	Replacement Female Cost (if applicable)		1,800	\$ / head
	Cow Cull Weight		1,250	pounds
Non-Fed Cull Cow Price		60	\$ / cwt	
Bulls	Bulls Needed		4	Bull(s)
	Bull Purchase Price		3,500	\$ / head
	Bull use (years)	(<10)	4	years
	Bull Death Loss Rate		0%	
	Cull Bull Price		85	\$ / cwt
	Cull Bull Weight		1,700	pounds
Calves	Calves Weaned	(<=44)	44	head/year
	Steer Weaning Weight		550	
	Heifer Weaning Weight		500	pounds
	Weaned Steer Price	(>=10)	183	\$ / cwt
	Weaned Heifer Price	(>=10)	170	\$ / cwt

Wintered Calf				
	Days Fed			days
	Death Loss	(0-100)		percent
Steers	Retained after Weaning	(<=22)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt
Heifers	Retained after Weaning	(<=22)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt

Stocker				
	Days Fed			days
	Death Loss	(0-100)		percent
Steers	Retained for Grazing	(<=0)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt
Heifers	Retained for Grazing	(<=0)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt

Feedlot				
	Days Fed			days
	Death Loss	(0-100)		percent
Steers	Placed on Feed	(<=0)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt
Heifers	Placed on Feed	(<=0)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt

Fed Cull Cow				
	Days Fed			days
	Death Loss	(0-100)		percent
	Placed on Feed	(<=7)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt

Feed

Name	Price per Unit Purchased	Priced Unit (tons, lbs. etc)	Fed Unit (tons, lbs. etc)	Fed Unit per Priced Unit	As Fed Price
Pasture	75.00	month	day	30	2.47
Creep Feed	60.00	per calf	per calf	1	60.00
Protein tubs - mineral supplement	100.00	lbs	lbs	200	0.50
Alfalfa	150.00	ton	lbs	2000	0.08
DDG Cubes	285.00	ton	lbs	2000	0.14
Salt and Mineral	1200.00	ton	ounce	32000	0.04
Grass Hay	120.00	ton	lbs	2000	0.06
Corn	5.25	bu	lbs	56	0.09
Distiller's Grain	150.00	ton	lbs	2000	0.08
Corn Stalks	1.00	day	day	1	1.00

Non-Feed Input Costs			Allocation Percentage				
Name	Cost per Year	Is This Cost Per Animal or for All Animals?	Breeding Herd (Optional)	Wintered Calf (Optional)	Stocker (Optional)	Feedlot (Optional)	Fed Cull Cow (Optional)
Labor	10.00	per animal					
Fuel	20.00	per animal					
Veterinary and Medical	35.00	per animal					
Cull Cow Marketing	35.00	per animal	0%	0%	0%	0%	0%
Cull Bull Marketing	35.00	per animal	0%	0%	0%	0%	0%
Cull Replacement Marketing	30.00	per animal	0%	0%	0%	0%	0%
Weaned Calf Marketing	20.00	per animal	0%	0%	0%	0%	0%
Wintered Calf Marketing	20.00	per animal	0%	0%	0%	0%	0%
Stocker Marketing	-	per animal	0%	0%	0%	0%	0%
Feedlot Marketing	-	per animal	0%	0%	0%	0%	0%

Depreciable Input Costs					Allocation Percentage				
Name	Current Value	Future Value	Time Horizon	Annual Repairs	Breeding Herd (Optional)	Weaned Calf Wintering (Optional)	Stocker (Optional)	Feedlot (Optional)	Fed Cull Cow (Optional)
Buildings /Barn/Fence	40,000	20,000	20	1,000					
General machinery & equipment	25,000	15,000	10	1,000					
Vehicles	7,500	3,000	7	750					
Livestock equipment	7,500	3,000	10	500					

Interest	
Operations Interest Rate	6%
Opportunity Rate	3%

Overhead Costs			Allocation Percentage				
	Amount		Breeding Herd (Optional)	Weaned Calf Wintering (Optional)	Stocker (Optional)	Feedlot (Optional)	Fed Cull Cow (Optional)
Real Estate Value*							
Real Estate Tax	540	per year					
Annual Insurance Premium	1,000	per year					
Professional Fees	750	per year					
Annual Management Charge		per year					
Other	750	per year					

* If cattle are grazed on owned land, either the value of the land and associated taxes or the grazing fees for that land should be included so costs are not double counted. If grazing fees are used to calculate costs when land is owned, only the cost of and taxes on non-grazing real estate should be included as an overhead cost. A calving shed is an example of non-grazing real estate.

Bull Budget (4 Bulls)

Income				Herd Total
	<u>Amount</u>	<u>Weight</u>	<u>Price</u>	<u>Total</u>
Cull Bull Sales	1.00 head @	\$ 1,700.00	\$ 85.00	1,445
Gross Income				1,445

Variable Costs				Herd Total
Breeding Costs				Total
Bulls	1.00		\$ 3,500 per head	3,500
Bull Feed				Total
	<u>Amount per Year</u>		<u>Per Animal or Total</u>	<u>Price</u>
Grass Hay	4000 lbs		per animal	@ 0.06 per lbs
Pasture	180 day		per animal	@ 2.47 per day
Salt and Mineral	1200 ounce		per animal	@ 0.04 per ounce
Corn Stalks	90 day		per animal	@ 1.00 per day
Total Feed				3,275
Other Variables				Total
Cull Bull Marketing		35.00	per animal	35
Operations Interest	Operations interest rate times feed and other variable expenses except marketing divided by two.			98
Total Non-feed				133
Total Variable Costs				6,909

Net Expense				5,464
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Breeding Herd Cash Budget (50 Cows)

Revenue				Herd Total	Per Cow	Per Calf
	<u>Number</u>	<u>Weight</u>	<u>Price</u>	<u>Total</u>		
Weaned Steer Value	22	550	183.00 per cwt	22,143		
Weaned Heifer Value	22	500	170.00 per cwt	18,700		
Cull Cow Sales	7	1,250	60.00 per cwt	5,250		
	-	-	per cwt			
Gross Income				46,093	921.86	1047.57

Variable Cash Costs				Herd Total	Per Cow	Per Calf
Breeding Costs	<u>Number</u>	<u>Price</u>		<u>Total</u>	<u>Total</u>	<u>Total</u>
Bulls	(This amount is the "Net Expenses" from the "Bulls" tab)			5,464	109.27	124.17
Replacements Purchased	7	1,800 \$ per head		12,600	252.00	286.36
Animal Purchases				18,064	361.27	410.54
Cow Feed	<u>Amount per Year</u>	<u>Per Animal or Total</u>	<u>Price</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>
Pasture	150 day	per animal	@ 2.47 per day	18,493	369.86	420.30
Corn Stalks	90 day	per animal	@ 1.00 per day	4,500	90.00	102.27
Protein tubs - mineral supplement	1200 lbs	total	@ 0.50 per lbs	600	12.00	13.64
Alfalfa	4000 lbs	per animal	@ 0.08 per lbs	15,000	300.00	340.91
Salt and Mineral	1200 ounce	per animal	@ 0.04 per ounce	2,250	45.00	51.14
Creep Feed	1 per calf	per animal	@ 60.00 per per calf	3,000	60.00	68.18
Replacement Heifer Feed	(From Replacement Spreadsheet)					
Total Feed				43,843	876.86	996.44
Other Variable	<u>Amount</u>	<u>Unit</u>	<u>Allocation</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>
Labor	10	per animal	100%	500	10.00	11.36
Fuel	20	per animal	100%	1,000	20.00	22.73
Veterinary and Medical	35	per animal	100%	1,750	35.00	39.77
Cull Cow Marketing	35	per animal		245	4.90	5.57
Cull Replacement Marketing	30	per animal				
Weaned Calf Marketing	20	per animal		880	17.60	20.00
Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.			1,540	30.81	41.63
Total Non-feed				5,915	118.31	141.06
Total Variable Cash Costs				67,822	1,356.44	1,548.03

Fixed Cash Costs				Herd Total	Per Cow	Per Calf
Depreciables Input Costs	<u>Repairs</u>	<u>Allocation</u>		<u>Total</u>	<u>Total</u>	<u>Total</u>
Buildings /Barn/Fence	1,000	100%		1,000	20.00	22.73
General machinery & equipment	1,000	100%		1,000	20.00	22.73
Vehicles	750	100%		750	15.00	17.05
Livestock equipment	500	100%		500	10.00	11.36
Cash Ownership				3,250	65.00	73.86
Overhead and Management	<u>Amount</u>	<u>Allocation</u>		<u>Total</u>	<u>Total</u>	<u>Total</u>
Real Estate Tax	540	100%		540	10.80	12.27
Annual Insurance Premium	1,000	100%		1,000	20.00	22.73
Professional Fees	750	100%		750	15.00	17.05
Annual Management Charge	-					
Other	750	100%		750	15.00	17.05
Total Overhead				3,040	60.80	69.09
Total Fixed Cash Costs				6,290	125.80	142.95

Total Cash Costs	74,112	1,482.24	1,690.99
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Net Cash Income	(28,019)	(560.38)	(643.42)
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Non-Cash Costs				Herd Total	Per Cow	Per Calf
Depreciables Input Costs	<u>Depreciation</u>	<u>Opportunity</u>	<u>Allocation</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>
Buildings /Barn/Fence	1,000	1,200	100%	2,200	44.00	50.00
General machinery & equipment	1,000	750	100%	1,750	35.00	39.77
Vehicles	643	225	100%	868	17.36	19.72
Livestock equipment	450	225	100%	675	13.50	15.34
Opportunity	<u>Amount</u>	<u>Allocation</u>				
Real Estate		100%				
Livestock	2,397	100%		2,397	47.93	54.47

	Total Non-Cash Costs	7,890	157.79	179.31
Total Cash and Non-Cash		Herd Total	Per Cow	Per Calf
	Total Costs	82,002	1,640.03	1,870.30
	Total Net Income	(35,909)	(718.17)	(822.73)

System Budget

Revenue				Herd Total
	Number	Weight	Price	Total
Weaned Steers	22	550	183 \$ / cwt	22,143
Weaned Heifers	22	500	170 \$ / cwt	18,700
Wintered Steers				
Wintered Heifers				
Stocker Steers				
Stocker Heifers				
Fed Steers				
Fed Heifers				
Cull Cow Sales	7	1,250	60 \$ / cwt	5,250
Fed Cull Cow Sales				
Cull Bull Sales	1	1,700	85 \$ / cwt	1,445
Cull Replacement Sales				
Gross Income				47,538

Variable Costs				Herd Total
Animal Purchases	Number	Price		Total
Replacement Females	7	1,800	\$ per head	12,600
Bulls	1.0	3,500	\$ per head	3,500
Total Animals Purchased				16,100

Feed	Amount		Price	Total
Pasture	270.25	month @	75.00 per month	20,268
Creep Feed	50.00	per calf @	60.00 per per calf	3,000
Protein tubs - mineral supplement	6.00	lbs @	100.00 per lbs	600
Alfalfa	100.00	ton @	150.00 per ton	15,000
DDG Cubes		ton @	285.00 per ton	
Salt and Mineral	2.03	ton @	1200.00 per ton	2,430
Grass Hay	8.00	ton @	120.00 per ton	960
Corn		bu @	5.25 per bu	
Distiller's Grain		ton @	150.00 per ton	
Corn Stalks	4,860.00	days @	1.00 per day	4,860
Total Feed				47,118

Other Variable	Total
Labor	500
Fuel	1,000
Veterinary and Medical	1,750
Cull Cow Marketing	245
Cull Bull Marketing	35
Cull Replacement Marketing	
Weaned Calf Marketing	880
Wintered Calf Marketing	
Stocker Marketing	
Feedlot Marketing	

Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.	1,639
	Total Other	6,049
	Total Variable Costs	69,267
Fixed Cash Costs		
		Herd Total
<u>Depreciables Input Costs</u>	<u>Repairs</u>	<u>Total</u>
Buildings /Barn/Fence	1000	1,000
General machinery & equipment	1000	1,000
Vehicles	750	750
Livestock equipment	500	500
	Total Ownership	3,250
<u>Overhead and Management</u>		<u>Total</u>
Real Estate Tax		540
Insurance		1,000
Professional Fees		750
Management		
Other		750
	Total Overhead	3,040
	Total Fixed Cash Costs	6,290
	Total Cash Costs	75,557
	Net Cash Income	(28,019)

Non-Cash Costs		Herd Total
<u>Depreciables Costs</u>	<u>Depre-ciation</u>	<u>Opportunity</u>
		<u>Total</u>
Buildings /Barn/Fence	1,000	1,200
General machinery & equipment	1,000	750
Vehicles	643	225
Livestock equipment	450	225
<u>Opportunity</u>		
Real Estate Opportunity	Investment rate times real estate value	
Livestock	Investment rate times livestock value	2,397
	Total Non-Cash Costs	7,890

Total Cash and Non-Cash	Herd Total
Total Costs	83,447
Net Total Income	(35,909)