

300 Head Cow Herd – Central Nebraska Representative Budget

Background

In Central Nebraska, a group of livestock producers primarily from southern Custer County and McPherson County provided information on a 300-cow herd. The cattle industry in Custer County and the surrounding area is significant to the economy. Cattle operations are typically of significant size while also raising alfalfa and summer annual hay, corn, and soybeans.

Livestock Management Practices

Typical calving time for cow herds in this area is March and April. Twelve to fifteen percent of cows are culled each year. Half of the producers noted that their replacements are raised from the herd, while the others said that bred heifers are generally purchased to replace the cull cows. The accompanying budget shows all of the replacements as purchased, however the budget could easily be modified to show growing replacements. The 600 head cow herd budget developed for this area provides an example of growing replacement heifers and includes cost of artificial insemination for the heifers as this is a typical practice.

Weaning rates per exposed cow average 91% with weaning weights ranging from 525 to 575 pounds per calf. Producers in this area mentioned selling half of their calves by Thanksgiving each year, right after weaning. The other half of their calf crop is backgrounded for 60 to 90 days and sold after the 1st of the year as shown in this budget example.

Chart 1: Cow-calf production flowchart provides numbers for a typical operation in central Nebraska.

Pasture and Feed

In this area of the state, approximately 60 - 70% of pasture utilized is typically rented with the other 30 - 40% of pasture ground owned by the operator. Current pasture rental rates in the area are running approximately \$300 per pair for the season with pasture utilized for the herd five months from the

May through September with a 7 acres per pair stocking rate. Stalks /crop residue are utilized for grazing after harvest from November to February at \$15 to \$20/acre with cows requiring approximately one acre per month while on stalks.

During calving season, a total mixed ration is utilized for the cows. Some mentioned providing creep feed to the calves before weaning. Creep feed is entered in this budget in the feed list, however due to current cost of feed, this was left off in the feeding regimen in this example. Backgrounding feed for half the calf crop (not sold at weaning or held for breeding replacement) would include a mix of alfalfa, grass hay, or cane hay and dried distillers' grain (wet or modified), corn silage, and dried rolled corn. Bulls are kept on pasture 5 to 6 months. In the fall, they are moved to a bull pasture and supplemented with some hay.

Feed and hay costs produced on owned ground, along with pasture and stalk rent expenses are considered as separate enterprises from the cow calf enterprise. Therefore, in this representative budget, feed, hay, and stalks are included as cash feed expenses valued at current market rate. Individual producers using the budget template can indicate an opportunity cost and real estate taxes for their land use in lieu of cash rental or purchase expenses. In addition, other annual maintenance costs of pasture or owned ground should be considered as well.

Machinery, Equipment and Facilities

Basic equipment utilized for cow calf operations in this area include the use of a tractor with loader, a side by side or 4-wheeler, a pickup, stock trailer, feed wagon, portable chute, and cattle panels. Facilities typically include a calving barn and corrals and barbed wire fence.

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 \$25 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 expenses 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. A marketing expense adjustment is added to the backgrounding calves’ budget to account for any expense difference from that of the weaned calves.

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.

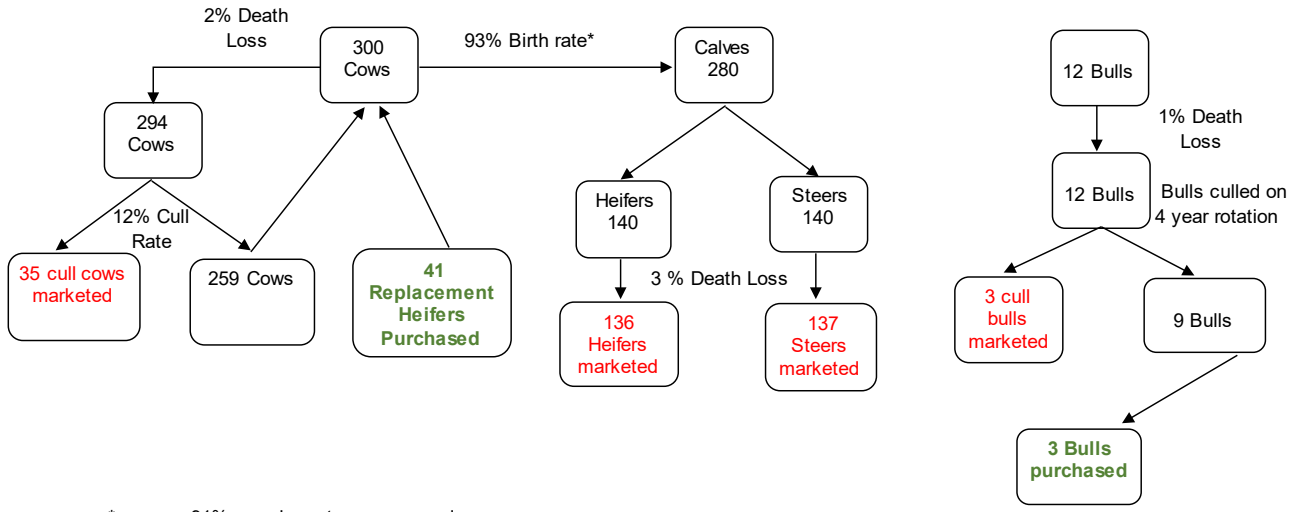
Opportunity interest of 3 percent is figured on the value of investment total in the livestock herd. This is an economic cost reflecting what rate of return could be earned if the herd were sold and the money invested in its most profitable alternative use.

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 assumes 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:

Glennis McClure, Extension Educator – Ag Economics
Troy Walz, Beef Systems Extension Educator
Randy Saner, Beef Systems Extension Educator
T.L. Meyer, Beef Systems Extension Educator
Brent Plugge, Beef Systems Extension Educator
Erin Laborie, Beef Systems Extension Educator

Chart 1: Cow-calf production flowchart, 300 cow herd - North Central Nebraska



* approx. 91% weaning rate per exposed cow
1/2 of the calves are sold after backgrounding

300 Head North Central Nebraska Cow Herd Budget Worksheet pages attached include:

- Budget Input sheets
- Bull budget
- Breeding herd cash budget

Cow-calf System Budget report (summarizes all budget information)



Cow Herd System Budget

Glennis McClure, Extension Educator /Farm & Ranch Management Analyst

This budgeting workbook is designed to provide analysis of the components of a beef production system. This template provides an example of a 300 head cow herd based in central 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

updated Sept. 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.	300	Cows	
	Average Cow Value		1,400	\$ / head	
	Cows Culled per Year		35	Cows	
	Cow Deaths per year		6	head	
	Number of Replacements Needed		41		
	Estimated Weaning Rate		91	percent	
	Extra Heifers Retained for Breeding that Will Not Be Used as Replacements		0	head	
	Culled Replacement Heifer Weight When Sold			pounds	
	Culled Replacement Heifer Selling Price			\$ / cwt	
	Cost of Marketing Culled Replacement Heifers			\$ / head	
	Replacement Females Purchased		(<=41)	41	head
	Replacement Female Cost (if applicable)			1,800	\$ / head
	Cow Cull Weight			1,350	pounds
	Non-Fed Cull Cow Price			64	\$ / cwt
Bulls	Bulls Needed		12	Bull(s)	
	Bull Purchase Price		3,000	\$ / head	
	Bull use (years)	(<10)	4	years	
	Bull Death Loss Rate		1%		
	Cull Bull Price		85	\$ / cwt	
	Cull Bull Weight		1,700	pounds	
Calves	Calves Weaned	(<=274)	273	head/year	
	Steer Weaning Weight		575		
	Heifer Weaning Weight		525	pounds	
	Weaned Steer Price	(>=10)	180	\$ / cwt	
	Weaned Heifer Price	(>=10)	165	\$ / cwt	

Backgrounded Calves				
	Days Fed		75	days
	Death Loss	(0-100)	0	percent
Steers	Retained after Weaning	(<=137)	68	head
	End Weight		725	pounds
	Market Price	(>=10)	165	\$ per cwt
Heifers	Retained after Weaning	(<=137)	68	head
	End Weight		675	pounds
	Market Price	(>=10)	158	\$ per cwt

Stocker				
	Days Fed			days
	Death Loss	(0-100)		percent
Steers	Retained for Grazing	(<=68)		head
	End Weight			pounds
	Market Price	(>=10)		\$ per cwt
Heifers	Retained for Grazing	(<=68)		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)	0	percent
Placed on Feed	(≤35)		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	300.00	5 months	day	150	2.00
Prairie Hay	130.00	ton	lbs	2000	0.07
Alfalfa	170.00	ton	lbs	2000	0.09
DDG Cubes	300.00	ton	lbs	2000	0.15
Salt and Mineral	900.00	ton	ounce	32000	0.03
Dried Rolled Corn	5.40	bu	lbs	56	0.10
Corn Stalks	17.50	month	day	30	0.58
Creep Feed	300.00	ton	lbs	2000	0.15

Non-Feed Input Costs

Name	Cost per Year	Is This Cost Per Animal or for All Animals?	Allocation Percentage			
			Breeding Herd	Wintered Calf (Optional)	Stocker (Optional)	Feedlot (Optional)
Labor	20.00	per animal				
Fuel	20.00	per animal				
Veterinary and Medical	20.00	per animal				
Cull Cow Marketing	25.00	per animal				
Cull Bull Marketing	25.00	per animal				
Cull Replacement Marketing	25.00	per animal				
Weaned Calf Marketing	20.00	per animal				
Backgrounded Calf Marketing - adj.	25.00	per animal				
Stocker Marketing	-	per animal				
Feedlot Marketing	-	per animal				
		per animal				

Depreciable Input Costs

Allocat

Name	Current Value	Future Value	Future Value Horizon	Annual Repairs	Breeding Herd (Optional)	Weaned Calf Wintering (Optional)
Barn /fencing	120,000	50,000	20	2,000	100%	
Machinery	100,000	50,000	10	2,000	50%	
Vehicles	35,000	15,000	7	1,200	50%	

Interest	
Operations Interest Rate	6%
Opportunity Rate	3%

Overhead Costs			Allocation Percentage		
	Amount		Breeding Herd (Optional)	Weaned Calf Wintering (Optional)	Stocker (Optional)
Real Estate Value*					
Real Estate Tax		per year			
Annual Insurance Premium	2,500	per year			
Professional Fees -accounting, legal, memberships	1,000	per year			
Annual Management Charge		per year			
Other		per year			

Bull Budget (12 Bulls)

Income				Herd Total
	<u>Amount</u>	<u>Weight</u>	<u>Price</u>	<u>Total</u>
Cull Bull Sales	2.97 head @	\$ 1,700.00	\$ 85.00	4,292
Gross Income				4,292

Variable Costs				Herd Total
Breeding Costs				Total
Bulls	3.00		\$ 3,000 per head	9,000
Bull Feed				Total
	Amount per Year		Per Animal or Total	Price
Prairie Hay	5250 lbs		per animal	@ 0.07 per lbs
Pasture	150 day		per animal	@ 2.00 per day
Salt and Mineral	1095 ounce		per animal	@ 0.03 per ounce
DDG Cubes	600 lbs		per animal	@ 0.15 per lbs
Dried Rolled Corn	700 lbs		per animal	@ 0.10 per lbs
Total Feed				9,955
Other Variables				Total
Cull Bull Marketing		25.00	per animal	74
Operations Interest	Operations interest rate times feed and other variable expenses except marketing divided by two.			299
Total Non-feed				373
Total Variable Costs				19,327

Net Expense				15,036
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Breeding Herd Cash Budget (300 Cows)

Revenue				Herd Total	Per Cow	Per Calf
	<u>Number</u>	<u>Weight</u>	<u>Price</u>	<u>Total</u>		
Weaned Steer Value	137	575	180.00 per cwt	141,795		
Weaned Heifer Value	137	525	165.00 per cwt	118,676		
Cull Cow Sales	35	1,350	64.00 per cwt	30,240		
Replacements Culled	-	-	per cwt			
Gross Income				290,711	969.04	1060.99

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)			15,036	50.12	54.88
Replacements Purchased	41	1,800 \$ per head		73,800	246.00	269.34
Animal Purchases				88,836	296.12	324.22
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	@ 2.00 per day	90,000	300.00	328.47
Salt and Mineral	1100 ounce	per animal	@ 0.03 per ounce	9,281	30.94	33.87
Prairie Hay	2000 lbs	per animal	@ 0.07 per lbs	39,000	130.00	142.34
Corn Stalks	120 day	per animal	@ 0.58 per day	21,000	70.00	76.64
DDG Cubes	1000 lbs	per animal	@ 0.15 per lbs	45,000	150.00	164.23
Replacement Heifer Feed	(From Replacement Spreadsheet)					
Total Feed				204,281	680.94	745.55
Other Variable	<u>Amount</u>	<u>Unit</u>	<u>Allocation</u>	<u>Total</u>	<u>Total</u>	<u>Total</u>
Labor	20	per animal	96%	5,775	19.25	21.08
Fuel	20	per animal	96%	5,775	19.25	21.08
Veterinary and Medical	20	per animal	96%	5,775	19.25	21.08
Cull Cow Marketing	25	per animal		875	2.92	3.19
Cull Replacement Marketing	25	per animal				
Weaned Calf Marketing	20	per animal		2,760	9.20	10.07
Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.			6,828	22.76	29.43
Total Non-feed				27,789	92.63	105.93
Total Variable Cash Costs				320,906	1,069.69	1,175.70

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>
Barn /fencing	2,000	100%		2,000	6.67	7.30
Machinery	2,000	50%		1,000	3.33	3.65
Vehicles	1,200	50%		600	2.00	2.19
Cash Ownership				3,600	12.00	13.14
Overhead and Management	<u>Amount</u>	<u>Allocation</u>		<u>Total</u>	<u>Total</u>	<u>Total</u>
Real Estate Tax	-					
Annual Insurance Premium	2,500	96%		2,406	8.02	8.78
Professional Fees -accounting, legal	1,000	96%		963	3.21	3.51
Annual Management Charge	-					
Other	-					
Total Overhead				3,369	11.23	12.30
Total Fixed Cash Costs				6,969	23.23	25.43

Total Cash Costs	327,875	1,092.92	1,201.13
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Net Cash Income	(37,164)	(123.88)	(140.14)
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Non-Cash Costs				Herd Total	Per Cow	Per Calf
Depreciables Input Costs	<u>Depreciation</u>	<u>Oppor-tunity Allocation</u>		<u>Total</u>	<u>Total</u>	<u>Total</u>
Barn /fencing	3,500	3,600 100%		7,100	23.67	25.91
Machinery	5,000	3,000 50%		4,000	13.33	14.60
Vehicles	2,857	1,050 50%		1,954	6.51	7.13
Opportunity	<u>Amount</u>	<u>Allocation</u>				
Real Estate		96%				
Livestock	13,400	100%		13,400	44.67	48.91

	Total Non-Cash Costs	26,454	88.18	96.55
Total Cash and Non-Cash		Herd Total	Per Cow	Per Calf
	Total Costs	354,328	1,181.09	1,297.68
	Total Net Income	(63,617)	(212.06)	(236.69)

Backgrounding Calf Budget

75 Days

Revenue				Herd Total	Per Calf Sold
	Number	Weight	Price	Total	Total
Steers	68	725	165 \$ / cwt	81,345	1,196.25
Heifers	68	675	158 \$ / cwt	72,522	1,066.50
Gross Revenue				153,867	1,131.38

Variable Cash Costs					Herd Total	Per Calf Sold
	Number	Weight	Price	Total	Total	
Steer Calves Retained	68	575	180.00 \$ / cwt	70,380		
Heifer Calves Retained	68	525	165.00 \$ / cwt	58,905		
Animals Purchased				129,285	950.63	
Feed	Amount Fed per Year		Per Animal or Total	Price	Total	Total
Prairie Hay	900 lbs		per animal	0.07 \$ lbs	7,956	58.50
DDG Cubes	250 lbs		per animal	0.15 \$ lbs	5,100	37.50
Salt and Mineral	250 ounce		per animal	0.03 \$ ounce	956	7.03
Dried Rolled Corn	250 lbs		per animal	0.10 \$ lbs	3,279	24.11
Total Feed				17,291	127.14	
NonFeed	Amount	Basis	Allocation	Total	Total	
Labor	20	per animal	4%	102	0.75	
Fuel	20	per animal	4%	102	0.75	
Veterinary and Medical	20	per animal	4%	102	0.75	
Marketing Adjustment	25	per animal		680	5.00	
Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.			1,712	12.59	
Total Non-feed				2,698	19.84	
Total Variable Cash Costs				149,274	1,097.60	

Fixed Cash Costs				Herd Total	Per Calf Sold
	Repairs	Allocation	Total	Total	
Depreciables Input Costs					
Machinery	2,000	50%	1,000	7.35	
Vehicles	1,200	50%	600	4.41	
Total Cash Costs on Depreciables				1,600	11.76
Overhead and Management	Amount	Allocation	Total	Total	
Real Estate Tax					
Annual Insurance Premium	2,500	4%	94	0.69	
Professional Fees -accounting, legal, member	1,000	4%	37	0.28	
Annual Management Charge					
Other					
Total Overhead and Ownership				131	0.96
Total Fixed Cash Costs				1,731	12.73

Total Cash Costs	151,005	1,110.33
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Net Cash Income	2,862	21.04
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Non-Cash Costs				Herd Total	Per Calf Sold
	Depreciation	Oppor-tunity	Allocation	Total	Total
Depreciable Assets					
Machinery	5,000	3,000	50%	4,000	29.41
Vehicles	2,857	1,050	50%	1,954	14.36
Real Estate					
Total Non-Cash Costs				5,954	43.78

Total Cash and Non-Cash				Herd Total	Per Calf Sold
	Total Costs				
Total Cash and Non-Cash	156,959			1,154.11	
Net Total Income	-3,092			(22.73)	

System Budget

300 head herd - Central NE, Sept. 2021

Revenue				Herd Total
	Number	Weight	Price	Total
Weaned Steers	69	575	180 \$ / cwt	71,415
Weaned Heifers	69	525	165 \$ / cwt	59,771
Backgrounded Steers	68	725	165 \$ / cwt	81,345
Backgrounded Heifers	68	675	158 \$ / cwt	72,522
Stocker Steers				
Stocker Heifers				
Fed Steers				
Fed Heifers				
Cull Cow Sales	35	1,350	64 \$ / cwt	30,240
Fed Cull Cow Sales				
Cull Bull Sales	3	1,700	85 \$ / cwt	4,292
Cull Replacement Sales				
Gross Income				319,585

Variable Costs				Herd Total
Animal Purchases				Total
	Number	Price		
Replacement Females	41	1,800 \$ per head		73,800
Bulls	3.0	3,000 \$ per head		9,000
Total Animals Purchased				82,800

Feed				Total
	Amount		Price	
Pasture	312.00	5 months @	300.00 per 5 months	93,600
Prairie Hay	392.70	ton @	130.00 per ton	51,051
Alfalfa		ton @	170.00 per ton	
DDG Cubes	170.60	ton @	300.00 per ton	51,180
Salt and Mineral	11.79	ton @	900.00 per ton	10,607
Dried Rolled Corn	757.14	bu @	5.40 per bu	4,089
Corn Stalks	1,200.00	month @	17.50 per month	21,000
Creep Feed		tons @	300.00 per ton	
Total Feed				231,527

Other Variable		Total
Labor		5,877
Fuel		5,877
Veterinary and Medical		5,877
Cull Cow Marketing		875
Cull Bull Marketing		74
Cull Replacement Marketing		
Weaned Calf Marketing		2,760
Backgrounded Calf Marketing - adj.		680
Stocker Marketing		
Feedlot Marketing		

Operations Interest	Calculations: Operations interest rate times feed and other variable expenses except marketing divided by two.	8,839
	Total Other	30,860
	Total Variable Costs	345,186
Fixed Cash Costs		
Depreciables Input Costs	Repairs	Herd Total
Barn /fencing	2000	<u>Total</u> 2,000
Machinery	2000	2,000
Vehicles	1200	1,200
	Total Ownership	5,200
Overhead and Management		<u>Total</u>
Real Estate Tax		
Insurance		2,500
Professional Fees		1,000
Management		
Other		
	Total Overhead	3,500
	Total Fixed Cash Costs	8,700
	Total Cash Costs	353,886
	Net Cash Income	(34,302)
Non-Cash Costs		
Depreciables Costs	Depre-ciation Opportunity	Herd Total
Barn /fencing	3,500 3,600	<u>Total</u> 7,100
Machinery	5,000 3,000	8,000
Vehicles	2,857 1,050	3,907
Opportunity		
Real Estate Opportunity	Investment rate times real estate value	
Livestock	Investment rate times livestock value	13,400
	Total Non-Cash Costs	32,407
Total Cash and Non-Cash		Herd Total
	Total Costs	386,294
	Net Total Income	(66,709)