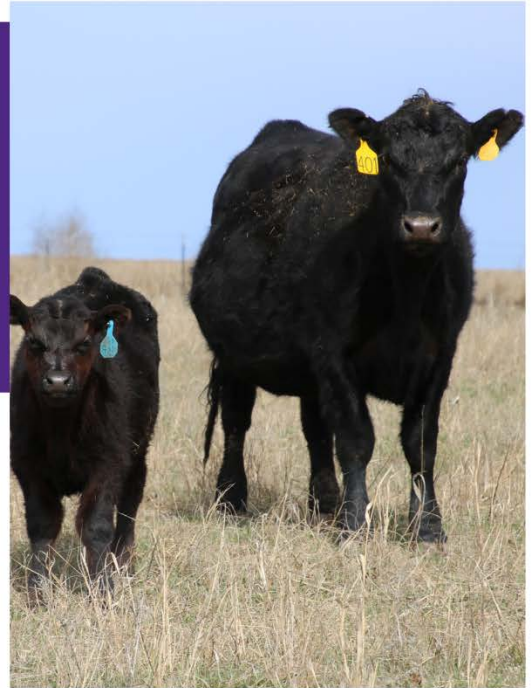
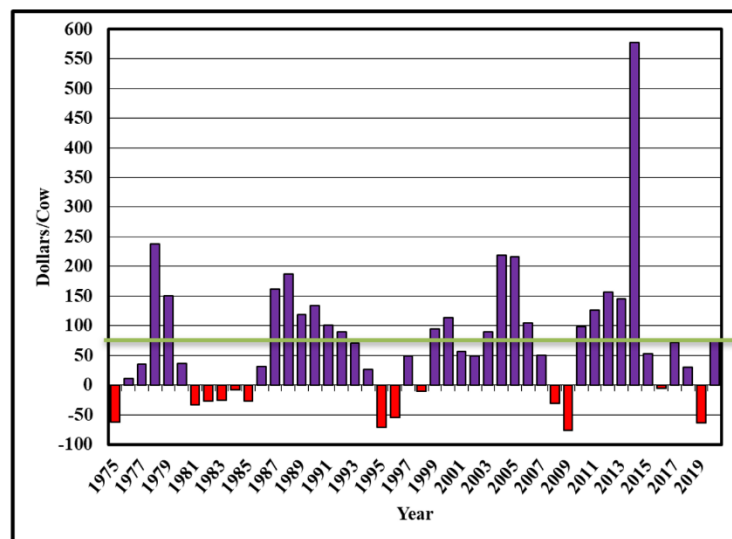


Determining Cost of Production for Cow/Calf Producers

Robin Reid, K-State Ag. Economics



Returns over Variable Costs

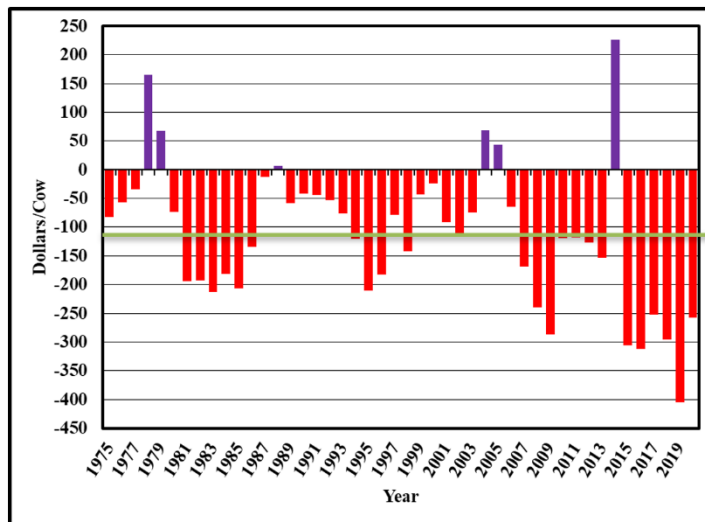


Average = \$71/cow

KFMA farms, Cow/Calf Enterprise reports 1975-2020



Returns over Total Costs



Average = -\$114/cow

KFMA farms, Cow/Calf Enterprise reports 1975-2020



Variability in Producer Profitability

Table 2. Beef Cow-Calf Enterprise Returns over Variable Costs, 2015-2019 (minimum of 3 years) *

	All Farms	Profit Category			Difference between	
		High 1/3 Head / \$	Mid 1/3 Head / \$	Low 1/3 Head / \$	High 1/3 and Low 1/3 Absolute	%
Number of Farms	77	26	25	26		
Age of Operator	55.8	54.4	54.8	58.3	-3.9	-7%
Number of Operators	0.98	1.05	0.98	0.91	0.14	16%
Labor allocated to livestock, %	30.6	35.8	32.9	23.2	13	54%
Number of Cows in Herd	142	183	137	106	78	73%
Number of Calves Sold	129	170	124	93	77	83%
Calves Sold per Cow in Herd	0.91	0.93	0.90	0.88	0.05	5%
Weight of Calves Sold, lbs.	625	638	628	608	29	5%
Calf Sales Price / Cwt	\$161.45	\$163.11	\$159.36	\$161.78	\$1.33	1%
Gross Income	\$763.66	\$835.34	\$774.69	\$681.38	\$153.96	23%
Feed	\$335.37	\$252.04	\$344.62	\$409.80	-\$157.77	-38%
Pasture	\$184.89	\$183.94	\$183.71	\$186.98	-\$3.04	-2%
Interest	\$30.27	\$21.42	\$35.80	\$33.80	-\$12.38	-37%
Vet Medicine / Drugs	\$38.34	\$31.85	\$40.41	\$42.85	-\$11.00	-26%
Livestock Marketing / Breeding	\$21.69	\$13.00	\$23.09	\$29.02	-\$16.01	-55%
Machinery	\$80.99	\$72.74	\$81.36	\$88.88	-\$16.14	-18%
Labor	\$19.36	\$17.46	\$22.21	\$18.52	-\$1.07	-6%
Other	\$50.03	\$45.94	\$49.68	\$54.45	-\$8.51	-16%
Total Variable Cost	\$760.93	\$638.38	\$780.87	\$864.31	-\$225.93	-26%
Return over Variable Costs	\$2.73	\$196.96	-\$6.19	-\$182.93	\$379.88	

*Sorted by Net Returns over Variable Costs per Cow

Economies of Scale

- More cows, more labor allocated to livestock

Production Efficiency

- More calves per cow

Cost Management

- Feed Costs



Detailed Cow-Calf Enterprise Budget

1/1/2022

Revenue:	Price	Unit	Qty	Unit	Per cow %	Total per Year per Cow	Total per Year Entire Herd
Weaned Steer Calves	\$ 180.00	per cwt	x 550	lbs	x 0.45 =	\$ 445.50	\$ 44,550.00
Weaned Heifer Calves	\$ 170.00	per cwt	x 500	lbs	x 0.30 =	\$ 255.00	\$ 25,500.00
Cull Cows	\$ 70.00	per cwt	x 1300	lbs	x 0.15 =	\$ 136.50	\$ 13,650.00
Other Income						\$ -	\$ -
Gross Income						\$ 837.00	\$ 83,700.00
Feed Costs:							
Pasture	(from pasture tab)					\$ 170.80	\$ 17,080.00
Residue/Cover Crop	(from residue & cover crop tab)					\$ 93.00	\$ 9,300.00
Hay and Forage	(from hay & forage tab)					\$ 137.53	\$ 13,752.56
Grain/Protein/Mineral	(from feedstuffs tab)					\$ 96.41	\$ 9,641.25
Total Feed Costs						\$ 497.74	\$ 49,773.81
Non-Feed Cash Costs:							
Veterinary Care and Pharmaceuticals	(from non-feed cost tab)					\$ 39.90	\$ 3,990.00
Marketing/Sale Barn fees	(from non-feed cost tab)					\$ 13.50	\$ 1,350.00
Annual Bull Charge and A.I.	(from non-feed cost tab)					\$ 57.50	\$ 5,750.00
Hired Labor	(from non-feed cost tab)					\$ 30.00	\$ 3,000.00
Cash Interest	(from non-feed cost tab)					\$ 34.75	\$ 3,475.00
Total Non-Feed Cash Costs						\$ 175.65	\$ 17,565.00
Total Cash Costs						\$ 673.39	\$ 67,338.81
Overhead Costs:							
Replacement Heifers*	(from non-feed cost tab)						
Cow Depreciation*	(from non-feed cost tab)						
Machinery, Facility/Equip. Depreciation	(from non-feed cost tab)					\$ 58.75	\$ 5,875.00
Machinery, Facility/Equip. Repairs						\$ 50.00	\$ 5,000.00
Utilities						\$ 14.00	\$ 1,400.00
Fuel						\$ 20.00	\$ 2,000.00
Taxes						\$ 8.00	\$ 800.00
Farm/Livestock Insurance						\$ 13.00	\$ 1,300.00
Other costs						\$ -	\$ -
Total Overhead Costs						\$ 163.75	\$ 16,375.00
Total Costs						\$ 837.14	\$ 83,713.81
Income Over Cash Costs						\$ 163.61	\$ 16,361.19
Income Over Total Costs						\$ (0.14)	\$ (13.81)

Kansas State University, Department of Agricultural Economics - www.agmanager.info

Publication: Detailed Cow/Calf Budget


Version- 9/1/2021

Breakeven calf sales price over feed costs	\$ 90.88
Breakeven calf sales price over cash costs	\$ 135.07
Breakeven calf sales price over total costs	\$ 176.26

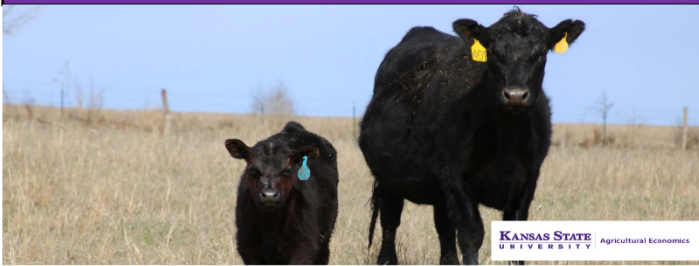
KSU-Detailed Cow Calf Budget

Excel spreadsheet for beef cow/calf enterprise budgeting to evaluate potential income, costs and profitability

Version- 9/1/2021



AgManager



KANSAS STATE UNIVERSITY Agricultural Economics

INTRODUCTION

The Kansas State University cost-return budgets were developed to serve as a barometer of profitability for various livestock industry enterprises. These budgets are NOT intended to represent any one operation. Each individual operation should adjust key inputs to reflect their own situation.

INSTRUCTIONS FOR THE USER:

Be sure to "Enable Content" and for the spreadsheet to function correctly and print macros to work. Blue values are inputs that should be changed from the defaults to match your operation. Green values are optional but will provide more information. Black values are automatically calculated.

FOR MORE INFORMATION:





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ACKNOWLEDGEMENTS:

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Date budget was prepared: 1/1/2022

Herd Inventory

	Number of Head:	
Cows*	100	*represents breeding cow running average
Bulls	5	
Yearling Replacement Heifers	15	

		Average Weight:
Anticipated Live Steer calves at weaning	45	550
Anticipated Live Heifer calves weaning	45	500
Anticipated Heifer calves retained	15	
Anticipated Cull Cows	15	1300

Weaning percentage:	90%
Replacement percentage:	15%
Cull cow percentage:	15%

Prices

Weaned Steer calf:	180	\$/cwt	Price Forecasting Tools: https://beefbasis.com/
Weaned Heifer calf:	170	\$/cwt	
Cull Cows:	70	\$/cwt	

[Print Table](#)

Total Pasture Cost:	\$17,080
Total Pasture Cost per Cow:	\$170.80

Cost per head

Total Cost:	\$9,300
Total Cost per Cow:	\$93.00

Hay/Forage Types		
Feed Name	Price	Unit
Brome	\$80.00	Ton
Prairie Hay	\$65.00	Ton
Sudan Hay	\$60.00	Ton
Alfalfa Hay	\$140.00	Ton
Corn Silage	\$40.00	Ton
Sorghum Silage	\$35.00	Ton
Straw	\$40.00	Ton
Other		
Other		
Other		
Other		
Other		
Other		
Other		
Other		

*If adding Hay/Forage, type name instead of "Other"



Amount of Hay/Forage			
Cows:			
Name:	pounds per day	# of days	Total
Prairie Hay	13.50	90	1215
Corn Silage	46.10	90	4149
Bulls:			
Name:	pounds per day	# of days	Total
Brome	23.50	90	2115
Prairie Hay	23.50	90	2115
Yearling Heifers:			
Name:	pounds per day	# of days	Total
Corn Silage	16.00	90	1440
Prairie Hay	7.00	90	630



Hay/Forage Summary						
Name:	Total Pounds for 100 Cows	Total Pounds for 5 Bulls	Total Pounds for 15 Heifers	Total Pounds Needed	Total Tons Needed	Total Cost
Brome	0	10,575	0	10,575	5	\$423.00
Prairie Hay	121,500	10,575	9,450	141,525	71	\$4,599.56
Sudan Hay	0	0	0	0	0	\$0.00
Alfalfa Hay	0	0	0	0	0	\$0.00
Corn Silage	414,900	0	21,600	436,500	218	\$8,730.00
Sorghum Silage	0	0	0	0	0	\$0.00
Straw	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00
Other	0	0	0	0	0	\$0.00

Total Cost: \$13,753
Total Cost per Cow: \$137.53

Feedstuffs Types		
Name:	Price:	Unit:
Dried Distillers	\$200.00	Ton
Soybean meal	\$350.00	Ton
Corn	\$6.00	Bushel
Oats	\$5.00	Bushel
Wheat	\$6.50	Bushel
Mineral	\$850.00	Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton
Other		Ton

*If adding Feedstuffs, type name instead of "Other"

Amount of Feedstuffs			
Cows:			
Name:	pounds per day	# of days	Total
Dried Distillers	4.50	90	405
Dried Distillers	1.00	60	60
Mineral	0.25	365	91.25
Bulls:			
Name:	pounds per day	# of days	Total
Dried Distillers	1.50	90	135
Mineral	0.25	365	91.25
Heifers:			
Name:	pounds per day	# of days	Total
Dried Distillers	2.00	90	180
Mineral	0.25	365	91.25

Feedstuff Summary					
Name:	Total Pounds for 100 Cows	Total Pounds for 5 Bulls	Total Pounds for 15 Heifers	Total Pounds Needed	Total Cost
Dried Distillers	46,500	675	2,700	49,875	\$4,987.50
Soybean meal	0	0	0	0	\$0.00
Corn	0	0	0	0	\$0.00
Oats	0	0	0	0	\$0.00
Wheat	0	0	0	0	\$0.00
Mineral	9,125	456	1,369	10,950	\$4,653.75
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
Other	0	0	0	0	\$0.00
			Total Cost:		\$9,641
			Total Cost per Cow:		\$96.41

Veterinary Care and Pharmaceuticals			
	Cost per Head	Head	Total
Annual Cow Vaccination/Parasite Control Cost	\$15.00	100	\$1,500.00
Annual Bull Vaccination/Parasite Control Cost	\$10.00	5	\$50.00
Heifer Vaccination/Parasite Control Cost	\$10.00	15	\$150.00
Calf Vaccination/Parasite Control Cost	\$6.00	90	\$540.00
Annual Bull Breeding Soundness Exam	\$50.00	5	\$250.00
Misc. Drugs and Emergency Vet Bills (total)	\$1,500.00		\$1,500.00
Total Cost:			\$3,990
Total Cost per Cow:			\$39.90

Marketing/Sale Barn Fees (including commission, yardage, insurance, advertising, etc.)			
	Cost	Head	Total
Calf Sales Commission (per head)	\$15.00	75	\$1,125.00
Cull Cow Sales Commission (per head)	\$15.00	15	\$225.00
Other Marketing fees (total)	\$0.00		\$0.00
Total Cost:			\$1,350
Total Cost per Cow:			\$13.50

Bull Cost	
Average Purchase Price	\$6,000
Average Cull Value	\$1,400
Number of Years Used	4
Yearly cost per bull:	\$1,150
Number of Bulls:	5
Total Cost:	\$5,750
Total Cost per Cow:	\$57.50

A.I. Cost			
Product	Cost per Head	# of Head	Total
Synchronization	\$20.00	0	\$0
Semen	\$30.00	0	\$0
A.I. Tech fee & Chute charge	\$10.00	0	\$0
Other	\$0.00	0	\$0
Total Cost:			\$0
Total Cost per Cow:			\$0.00

Additional information on analyzing A.I. costs can be found [HERE](#)

Hired Labor	
Annual Salary	\$0
and/or	
Hours per year	200
Dollars per hour	\$15.00
Total Cost:	\$3,000
Total Cost per Cow:	\$30.00

Machinery/Equipment Depreciation					
	Current Value	Outstanding Loan Balance	% Used for Cow/Calf Operation	Annual Depr. Percentage	Annual Depr.
Tractor	\$20,000	\$15,000	50%	10%	\$1,000
Feed Wagon	\$20,000	\$10,000	100%	10%	\$2,000
Skid Steer	\$20,000	\$0	50%	10%	\$1,000
4-Wheeler	\$5,000	\$0	75%	10%	\$375
Livestock Shed and Corrals	\$30,000	\$0	100%	5%	\$1,500
Other					\$0
Other					\$0
Other					\$0
Other					\$0
Other					\$0
Other					\$0
Other					\$0
Total Cost:					\$5,875
Total Cost per Cow:					\$58.75

Interest Costs			
	Annual Interest		
	Current Balance	Rate	Estimated Interest cost
Cattle Operating Loan(s)*	\$30,000	6.00%	\$1,800.00
Cattle Ownership Loan(s)	\$10,000	5.50%	\$550.00
Machinery/Equipment Loan(s)*	\$25,000	4.50%	\$1,125.00
Land Loan(s)	\$0	0.00%	\$0.00
Other			\$0.00
	Total Cost:		\$3,475
	Total Cost per Cow:		\$34.75

Are you purchasing Replacement Heifers?

No

Costs below are only used in the budget if "yes" is selected above. If raising replacements heifers, costs are already captured in reduced heifer calf income and cost of raising heifers

Replacement Heifer Cost		Cow Depreciation	
Cost of Purchased Replacement Heifer	\$1,000	Starting Value	\$1,000
Number of Replacement Heifers Purchased per year*	15	Average Years in Herd	6
		Depreciation per Year	\$166.67
Total Cost:	\$15,000	Total Cost:	\$16,667
Total Cost per Cow:	\$150.00	Total Cost per Cow:	\$166.67