

BEEF CATTLE PRODUCTION COSTS IN MODOC COUNTY

INTRODUCTION

Total gross agricultural income for Modoc County has ranged from \$47.6 million in 1975 to \$67.6 million in 1979. During this same five year period, gross income from beef cattle only has increased from \$6.7 million in 1975 to \$22.8 million in 1979. These figures indicate that beef cattle alone contributed 34 percent of Modoc County's total gross agricultural income for 1979 and an average of 25 percent of this total over the past five years. Thus, beef cattle production is the most important single industry involved in the economy of Modoc County.

This study presents data on the cash and non-cash cost of producing beef in Modoc County. It is hoped that this information will serve a two-fold purpose; 1) give established producers an opportunity to compare and evaluate their operations, and 2) provide information on investment costs, operating costs, and expected returns for those new operators who are unfamiliar with Modoc conditions. The study includes examples of ranch sizes representing 200, 500 and 1000 producing cows. No attempt has been made to present data from any particular ranch, but rather, the figures shown represent ranches of average management and production.

Initial values in this study were obtained through meetings and interviews with ranchers representing the size operations shown. It has been necessary to update these values periodically, but with unprecedented inflation and wildly fluctuating markets the study still may not reflect the true economic picture on the date presented. For this reason, tables have been added to give a comparison of returns at different market weights, prices per pound, and at increasing costs.

How cattle are marketed depends on several factors; including owner preference, ranch capabilities, and price at any given time. In Modoc County producers annually market a significant number of both weaners and long yearlings. Production costs and returns vary with the type of operation involved. For this reason, this study has been divided into two parts; 1) marketing weaner calves, and 2) marketing yearlings. It is hoped that this procedure will offer useable information to those who traditionally operate one way or the other and those who, through built-in flexibility, may fluctuate depending on market conditions.

One final observation is in order. This study indicates that with the market weights and prices used, producers are barely above the break-even point at the present time. Experience indicates that production costs will continue to escalate while prices will continue to fluctuate. If prices fall or even remain stable, the profit position of the producer will worsen rapidly. Any increase in production costs, caused by increasing regulatory demands, unless accompanied by increased production efficiency, will accelerate this depressed economic situation.

Cecil Pierce
Farm Advisor

SUMMARY OF BEEF CATTLE PRODUCTION
MARKETING YEARLING CALVES

		<u>200 COWS</u>		
A. INVESTMENT	PAGE NO. *	AMOUNT	COST/COW	PERCENT
1. Land	2	\$300,500	\$1,503	59
2. Improvements	2	21,800	109	4
3. Equipment	3	31,980	160	6
4. Livestock	4	149,400	747	29
5. Public Land	4	10,020	50	2
TOTAL INVESTMENT		\$513,700	\$2,569	100%
B. CASH COSTS				
		<u>AMOUNT</u>	<u>COST/COW</u>	<u>COST/LB</u>
1. Range Fees & Salt	5	3,242	16.21	2.7¢
2. Labor	5	2,400	12.00	2.0
3. Repairs & Maintenance	5	6,105	30.53	5.2
4. Taxes, Insurance, Etc.	5	6,087	30.44	5.2
5. Bull Replacement	5	3,600	18.00	3.1
6. Veterinary Medicine	5	1,500	7.50	1.3
7. Baling Wire & Custom Haying	5	9,360	46.80	7.9
8. Fertilizer	5	3,510	17.55	3.0
9. Fuel & Irrigation Power	5	4,649	23.25	3.9
10. Misc.	5	2,000	10.00	1.7
TOTAL CASH COSTS		\$42,453	212.28	36.0¢
C. NON-CASH COSTS				
1. Int. (Operating Capital)	5	5,094	25.47	4.3
2. Depreciation	5	8,140	40.70	6.9
		13,234	66.17	11.2
D. NET INCOME				
1. Gross Income	6	70,055	350.28	59.4
2. Less Cash Costs	6	42,453	212.28	36.0
3. Ranch Income	6	27,602	138.00	23.4
4. Less Non-Cash Costs	6	13,234	66.17	11.2
5. Net Income	6	14,368	71.83	12.2
6. Less Family Labor	6	12,000	60.00	10.2
7. Return on Investment	6	2,368	11.83	2.0
8. Percent Return	6	0.5%		

* Refer to page indicated for further details

500 COWS			1000 COWS		
AMOUNT	COST/COW	PERCENT	AMOUNT	COST/COW	PERCENT
\$769,750	\$1,539	58	\$1,490,500	\$1,491	57
66,775	134	5	127,150	127	5
94,317	189	7	203,300	203	8
373,500	747	28	747,000	747	28
26,720	53	2	53,440	53	2
\$1,331,062	\$2,662	100%	\$2,621,390	\$2,621	100%
AMOUNT	COST/COW	COST/LB	AMOUNT	COST/COW	COST/LB
8,105	16.21	2.8¢	16,207	16.21	2.8¢
15,780	31.56	5.4	45,740	45.74	7.8
18,155	36.31	6.2	38,124	38.12	6.5
14,535	29.07	4.9	27,495	27.50	4.7
9,000	18.00	3.1	18,000	18.00	3.1
3,750	7.50	1.3	7,500	7.50	1.3
4,200	8.40	1.4	7,800	7.80	1.3
9,725	19.45	3.3	17,550	17.55	3.0
15,372	30.74	5.2	30,744	30.74	5.2
5,000	10.00	1.7	10,000	10.00	1.7
\$103,622	207.24	35.3	\$219,160	219.16	37.3
12,435	24.87	4.2	26,299	26.30	4.5
24,205	48.41	8.2	50,832	50.83	8.6
36,640	73.28	12.4	77,131	77.13	13.7
174,590	349.18	59.4	349,950	349.95	59.4
103,622	207.24	35.3	219,160	219.16	37.3
70,968	141.94	24.1	130,790	130.79	22.1
36,640	73.28	12.5	77,131	77.13	13.1
34,328	68.66	11.6	53,659	53.66	9.0
12,000	24.00	4.1	12,000	12.00	2.0
\$22,328	\$44.66	7.5¢	\$41,659	\$41.66	7.0¢
1.7%			1.6%		

**BEEF CATTLE PRODUCTION
MARKETING YEARLING CALVES**

I. INVESTMENT

A. LAND

	<u>200 COWS</u>	
	<u>ACRES</u>	<u>VALUE</u>
1. Alfalfa-Unimproved \$500/ac	40	\$ 20,000
2. Irrigated Meadow \$450/ac	170	76,500
3. Range \$100/ac	2,000	200,000
4. Farmstead \$400/ac	10	4,000
TOTAL LAND INVESTMENT	\$2,220	\$300,500
INVESTMENT PER COW		1,503

B. IMPROVEMENTS

	<u>NO.</u>	<u>VALUE</u>
1. Home, Hired Help		
2. Pole Barns		
3. Machine Shed	1	3,500
4. Shop & Tools	1	8,500
5. Corrals	1	5,000
6. Fences \$2000/mile	5	10,000
7. Squeeze Chute	1	1,500
8. Livestock Scales		
9. Well	1	10,000
10. Ditches, Meadow @ \$30/ac	170	5,100
TOTAL IMPROVEMENTS		\$43,600
CURRENT VALUE (50% of total)		21,800
CURRENT VALUE PER COW		109

<u>500 COWS</u>		<u>1000 COWS</u>	
<u>ACRES</u>	<u>VALUE</u>	<u>ACRES</u>	<u>VALUE</u>
100	\$ 50,000	200	\$ 100,000
475	213,750	850	382,500
5,000	500,000	10,000	1,000,000
15	6,000	20	8,000
5,590	\$769,750	11,070	\$1,490,500
	1,539		1,491

<u>NO.</u>	<u>VALUE</u>	<u>NO.</u>	<u>VALUE</u>
1	\$30,000	3	\$ 90,000
1	15,000	2	30,000
1	7,000	1	7,000
1	17,000	1	18,000
2	10,000	2	10,000
12	24,000	23	46,000
1	1,500	2	3,000
1	4,800	1	4,800
1	10,000	2	20,000
475	14,250	850	25,500
	\$133,550		\$254,300
	\$ 66,775		\$127,150
	\$ 134		\$ 127

YEARLING CALF PRODUCTION

I. INVESTMENT

C. EQUIPMENT

	200 COWS		500 COWS		1000 COWS	
	NO.	VALUE	NO.	VALUE	NO.	VALUE
1. Tractors						
a. 30 hp whl			2	17,000	3	25,500
b. 50 hp whl	1	11,500	1	11,500	1	11,500
c. 80 hp cml					1	66,000
2. Plow 16 inch	1-3Bot	1,495	1-3Bot	1,495	1-5Bot	2,700
3. Disk-Tandem	1-10Ft	3,240	1-10Ft	3,240	1-14Ft	4,800
4. Harrow-Spike	1-20Ft	1,500	1-28Ft	2,148	1-40Ft	3,600
5. Drag-Meadow	1	1,500	1	1,500	1	1,500
6. Drill	1-8 Ft	3,750	1-14Ft	4,800	1-14Ft	4,800
7. Sprayer	1	2,000	1	2,000	1	2,000
8. Baler						
a. PTO			1	11,000	1	11,000
b. SP					1	21,000
9. Side Delivery Rake	1	2,300	1	2,300	2	4,600
10. Swather			1	22,000	2	44,000
11. Bale Loader	1	1,000	1	1,000	2	2,000
12. Harrow Bed			1	32,000	2	64,000
13. Wagon	1	975	2	1,950	4	3,900
14. Truck 2 ton			1	15,000	2	30,000
15. Pickup 3/4 ton 4X4	1	9,000	2	18,000	4	27,000
16. Stock Trailer	1	3,000	1	3,000	2	6,000
17. Auto	1/2	4,000	1/2	4,000	1/2	4,000
18. Irrigation Pump	1-40hp	8,000	1-75hp	12,000	2-75hp	24,000
19. Wheel Lines @\$200/ac	40	8,000	100	20,000	200	40,000
20. Ditcher	1	2,700	1	2,700	1	2,700
TOTAL EQUIPMENT		\$63,960		\$188,633		\$406,600
CURRENT VALUE (50% of total)		31,980		94,317		203,300
CURRENT VALUE PER COW		160		189		203

YEARLING CALF PRODUCTION

I. INVESTMENT

D. LIVESTOCK

	200 COWS	
	NO.	VALUE
1. Saddle Horses @\$750	4	\$ 3,000
2. Cows @ \$600	200	120,000
3. Replacement Heifers @ \$300	40	12,000
4. Bulls @ \$1200	12	14,400
TOTAL LIVESTOCK	256	\$149,400
VALUE PER COW		747

E. PUBLIC LAND

1. Fences @ \$1000/mi (50%)	6	6,000
2. Water Development	6	4,020
TOTAL PUBLIC LAND		\$10,020
VALUE PER COW		50

F. TOTAL INVESTMENT

	VALUE	VALUE/COW
1. Land	\$300,500	1,503
2. Improvements-Current Value	21,800	109
3. Equipment-Current Value	31,980	160
4. Livestock	149,400	747
5. Public Land	10,020	50
TOTAL INVESTMENT	\$513,700	\$2,569

<u>500 COWS</u>		<u>1000 COWS</u>	
<u>NO.</u>	<u>VALUE</u>	<u>NO.</u>	<u>VALUE</u>
10	\$ 7,500	20	\$ 15,000
500	300,000	1000	600,000
100	30,000	200	60,000
30	36,000	60	72,000
640	\$373,500	1280	\$747,000
	747		747

16	16,000	32	32,000
16	10,720	32	21,440
	\$26,720		\$53,440
	53		53

<u>VALUE</u>	<u>VALUE/COW</u>	<u>VALUE</u>	<u>VALUE/COW</u>
\$769,750	1,539	\$1,490,500	1,491
66,775	134	127,150	127
94,317	189	203,300	203
373,500	747	747,000	747
26,720	53	53,440	53
\$1,331,062	\$2,662	\$2,621,390	\$2,621

YEARLING CALF PRODUCTION

II. OPERATING COSTS

A. CASH COSTS

		200 COWS	
		AMOUNT	COST/LB
1. Range Fees \$2.40/AUM		\$ 2,978	2.5¢
2. Salt		264	0.2
3. Labor			
a. Part Time \$800/mo		2,400	2.0
b. Full Time \$915/mo			
4. Repairs & Maintenance			
a. Equipment (7½% of Orig. Cost)		4,797	4.1
b. Improvements (3% of Or. Cost)		1,308	1.1
5. Taxes			
a. Property \$4.15/100		3,344	2.8
b. Adualorem & Possessory Int.		543	0.5
6. Insurance		1,200	1.0
7. Bull Replacement \$1200 ea		3,600	3.1
8. Veterinary & Medicine		1,500	1.3
9. Baling Wire \$3/ton			
10. Fertilizer - Alfalfa \$7/ac		3,510	3.0
Meadow \$19/ac			
11. Fees, Travel & Accounting		1,000	0.8
12. Custom Haying \$18/ton		9,360	7.9
13. Fuel		2,100	1.8
14. Irrigation Power \$21.24/ac ft		2,549	2.2
15. Misc		2,000	1.7
TOTAL CASH COSTS		\$42,453	36.0¢
CASH COSTS PER COW		212	

B. NON-CASH COSTS

1. Int. on Operating Capital		\$ 5,094	4.3¢
2. Depreciation			
a. Improvements (4% of cost)		1,744	1.5
b. Equipment (10% of cost)		6,396	5.4
TOTAL NON-CASH COSTS		\$13,234	11.2¢
NON-CASH COSTS PER COW		66	

<u>500 COWS</u>		<u>1000 COWS</u>	
<u>AMOUNT</u>	<u>COST/LB</u>	<u>AMOUNT</u>	<u>COST/LB</u>
\$ 7,445	2.5¢	\$ 14,887	2.5¢
660	0.2	1,320	0.2
4,800	1.6	12,800	2.2
10,980	3.7	32,940	5.6
14,148	4.8	30,495	5.2
4,007	1.4	7,629	1.3
8,679	3.0	16,783	2.8
1,356	0.5	2,712	0.5
3,000	1.0	6,000	1.0
9,000	3.1	18,000	3.1
3,750	1.3	7,500	1.3
4,200	1.4	7,800	1.3
9,725	3.3	17,550	3.0
1,500	0.5	2,000	0.3
9,000	3.1	18,000	3.1
6,372	2.2	12,744	2.2
5,000	1.7	10,000	1.7
\$103,622	35.3¢	\$219,160	37.3¢
207		219	
12,435	4.2	26,299	4.5
5,342	1.8	10,172	1.7
18,863	6.4	40,660	6.9
\$36,640	12.4¢	\$77,131	13.1¢
73		77	

YEARLING CALF PRODUCTION

II. PRODUCTION COSTS

C. TOTAL COSTS

	200 COWS		
	AMOUNT	COST/LB	COST/COW
1. Cash Costs	\$ 42,453	\$ 0.36	\$ 212
2. Non-Cash Costs	13,234	0.11	66
TOTAL OPERATING COSTS	55,687	0.47	278
3. Family Labor	12,000	0.10	60
4. Interest on Investment (9%)	46,233	0.39	231
TOTAL PRODUCTION COSTS	\$113,920	0.96	569

III. INCOME

A. GROSS INCOME

	NO.	AMOUNT	INCOME/COW
1. Steers 700 lbs @ 65¢	79	35,945	180
2. Heifers 650 lbs @ 60¢	40	15,600	78
3. Cows 900 lbs @ 50¢	36	16,200	81
4. Bulls 1400 lbs @ 55¢	3	2,310	12
TOTAL GROSS INCOME	158	70,055	351

B. NET INCOME

	AMOUNT	INCOME/LB	INCOME/COW
1. Gross Income	\$ 70,055	0.59	351
2. Less Cash Costs	42,453	0.36	212
3. Ranch Income	27,602	0.23	139
4. Less Non-Cash Costs	13,234	0.11	66
5. Net Income	14,368	0.12	73
6. Less Family Labor	12,000	0.10	60
7. Return on Investment	2,368	0.02	13
8. % Return on Investment	0.5		

<u>500 COWS</u>			<u>1000 COWS</u>		
<u>AMOUNT</u>	<u>COST/LB</u>	<u>COST/COW</u>	<u>AMOUNT</u>	<u>COST/LB</u>	<u>COST/COW</u>
\$103,622	\$0.35	\$207	\$219,160	\$0.37	\$219
36,640	0.12	73	77,131	0.13	77
140,262	0.47	280	296,291	0.50	296
12,000	0.04	24	12,000	0.02	12
119,796	0.41	240	235,925	0.40	236
\$272,058	0.92	544	\$544,216	0.92	544

<u>NO.</u>	<u>AMOUNT</u>	<u>INCOME/COW</u>	<u>NO.</u>	<u>AMOUNT</u>	<u>INCOME/COW</u>
198	90,090	180	396	180,180	180
99	38,610	77	198	77,220	77
90	40,500	81	180	81,000	81
7	5,390	11	15	11,500	12
394	174,590	349	789	349,950	350

<u>AMOUNT</u>	<u>INCOME/LB</u>	<u>INCOME/COW</u>	<u>AMOUNT</u>	<u>INCOME/LB</u>	<u>INCOME/COW</u>
\$174,590	0.59	349	\$349,950	0.59	350
103,622	0.35	207	219,160	0.37	219
70,968	0.24	142	130,790	0.22	131
36,640	0.12	73	77,131	0.13	77
34,328	0.12	69	53,659	0.09	54
12,000	0.04	24	12,000	0.02	12
22,328	0.08	45	41,659	0.07	42
1.7			1.6		

PERCENT RETURN ON INVESTMENT

Showing Increasing Costs
Yearling Calf Production

Price/lb - Steer Calves

200 Cow Operation

	.65	.75	.85	.95	1.05	1.15
0%	0.5	2.8	5.1	7.3	9.6	11.9
5%	-0-	2.0	4.2	6.4	8.6	10.8
10%	-0-	1.3	3.4	5.6	7.6	9.7
15%	-0-	0.7	2.7	4.7	6.7	8.7
20%	-0-	0.1	2.0	3.9	5.8	7.8

500 Cow Operation

	.65	.75	.85	.95	1.05	1.15
0%	1.7	3.9	6.1	8.3	10.5	12.7
5%	1.1	3.2	5.3	7.4	9.5	11.6
10%	0.5	2.5	4.5	6.5	8.5	10.5
15%	-0-	1.9	3.8	5.7	7.6	9.6
20%	-0-	1.3	3.2	5.0	6.9	8.7

1000 Cow Operation

	.65	.75	.85	.95	1.05	1.15
0%	1.6	3.8	6.1	8.3	10.6	12.8
5%	1.0	3.1	5.2	7.4	9.5	11.7
10%	0.4	2.4	4.5	6.5	8.5	10.6
15%	0.2	1.8	3.8	5.7	7.7	9.6
20%	-0-	1.2	3.1	5.0	6.9	8.7

PERCENT INCREASE IN ALL COSTS

NOTE: Percent increase in all costs includes cash costs, non-cash costs, family labor and investment.

PERCENT RETURN ON INVESTMENT

MARKETING YEARLING CALVES

Price/lb - Steer Calves

200 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-0-	-0-	2.1	4.3	6.5	8.7	10.9
680	-0-	0.1	2.4	4.7	6.9	9.2	11.4
700	-0-	0.5	2.8	5.1	7.3	9.6	11.9
720	-0-	0.8	3.1	5.4	7.8	10.1	12.5
740	-0-	1.0	3.4	5.8	8.2	10.6	13.0

500 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-0-	1.1	3.2	5.3	7.5	9.6	11.7
680	-0-	1.4	3.6	5.7	7.9	10.0	12.2
700	-0-	1.7	3.9	6.1	8.3	10.5	12.7
720	-0-	2.0	4.2	6.5	8.7	11.0	13.2
740	-0-	2.2	4.5	6.8	9.1	11.4	13.7

1000 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-0-	1.0	3.2	5.3	7.5	9.6	11.8
680	-0-	1.3	3.5	5.7	7.9	10.1	12.3
700	-0-	1.6	3.8	6.1	8.3	10.6	12.8
720	-0-	1.9	4.2	6.5	8.8	11.0	13.3
740	-0-	2.2	4.5	6.8	9.2	11.5	13.8

STEER CALF WEIGHTS (LBS)

1. Return on investment = total gross income less cash costs, non-cash costs, and family labor.
2. Price/lb. is given as steer calf prices, but computations consider all market animal prices (heifers, steers, bulls, and cull cows).
3. Weights are indicated as steer calf weights, but computations are based on weights of all market animals.

DOLLAR RETURN ON INVESTMENT

MARKETING YEARLING CALVES

Price/lb - Steer Calves

200 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-11,964	- 650	10,664	21,978	33,292	44,606	55,920
680	-10,693	859	12,411	23,963	35,515	47,067	58,619
700	- 9,422	2,368	14,158	25,948	37,738	49,528	61,318
720	- 8,151	3,877	15,905	27,933	39,961	51,989	64,017
740	- 6,880	5,386	17,652	29,918	42,184	54,450	66,716

500 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-13,391	14,796	42,983	71,170	99,357	127,544	155,731
680	-10,219	18,562	47,343	76,124	104,905	133,686	162,467
700	- 7,047	22,328	51,703	81,078	110,453	139,828	169,203
720	- 3,875	26,094	56,063	86,032	116,001	145,970	175,939
740	- 703	29,860	60,423	90,986	121,549	152,112	182,675

1000 Cow Operation

	.55	.65	.75	.85	.95	1.05	1.15
660	-29,919	26,595	83,109	139,623	196,137	252,651	309,165
680	-23,575	34,127	91,829	149,531	207,233	264,935	322,637
700	-17,231	41,659	100,549	159,439	218,329	277,219	336,109
720	-10,887	49,191	109,269	169,347	229,425	289,503	349,581
740	- 4,543	56,723	117,989	179,255	240,521	301,787	363,053

STEER CALF WEIGHTS (LBS)

1. Return on investment - total gross income less cash costs, non-cash costs, and family labor.
2. Price/lb. is given as steer calf prices, but computations consider all market animal prices (heifers, steers, bulls, and cull cows).
3. Weights are indicated as steer calf weights, but computations are based on weights of all market animals.

COST STUDY ASSUMPTIONS

As in any study, certain assumptions must be established that are typical of actual conditions. The following assumptions are based on averages of management practices, physical and economic factors of Modoc County. The same assumptions were used in all three ranch sizes (200, 500, and 1000 cows).

1. 80% calf crop marketed
2. 2% death loss of cows
3. 20% heifer replacement rate
4. 25% bull replacement rate
5. 16.7 cows per bull
6. Salt consumption - 2 oz. per day per cow
7. Public grazing fees - \$2.40 per AUM
8. Hay consumption - 2 tons per year per cow
9. Hay yields - Alfalfa - 4½ tons per acre
Meadow - 2 tons per acre
10. Fertilizer costs - Alfalfa - \$7 per acre
Meadow - \$19 per acre
11. Property tax rate - \$4.15/100 with 25% assessment ratio
12. Advalorem tax on bulls - \$3.85 per bull
13. Possessory Interest tax - 40¢ per AUM
14. Depreciation Rates - Improvements 4% of new cost
Equipment 10% of new cost
15. Interest rates - Operating capital - 12%
Investment 9%

NOTES

- a. Cost and income figures per pound were calculated on total pounds of beef sold (calves, cull cows, and bulls).
- b. Labor includes employee benefits.
- c. Full time labor includes housing and meat.
- d. Equipment costs were derived from surveying dealers in Modoc County.

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