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MANAGING COW CALF RESOURCES

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Effective management involves the decision-making process whereby success can be achieved. Success is the progressive realization of worthwhile goals.

A realistic management goal for profit-oriented cow-calf producers is as follows:

Manage the available resource (optimum combination) for maximum continuing net profit while conserving and improving the resources.

Cow-calf operations have several resource areas that must be profitably managed. These resources are land (forage), cattle, markets, equipment, human (hired labor, management and family) and possibly others. Biological and economical relationships within and between these resource areas that affect productivity and profitability must be understood and managed.

Without question, the human resource is the most important resource. It is human beings that understand resource relationships, establish goals, make decisions, and provide the labor that implements the written management plan.

Integrated resource management (IRM) is the buzz word of successful cow-calf management today. However, successful managers of past decades used the IRM concepts long before the name was conceived.

The Profitability Formula

Most simply stated,

$$\text{Profit or <Loss>} = \text{Income} - \text{Costs}$$

Profit-oriented management decisions are directed towards either increasing income or decreasing costs or doing both at the same time.

The profitability formula in slightly more detail is:

$$\text{Profit or <Loss>} = (\text{Pounds} \times \text{Price}) - \text{Costs}$$

To increase profit (or minimize loss), cow-calf producers simply focus on three areas: (1) increase pounds, (2) increase price, and (3) decrease costs. Eventually, producers will want to achieve an optimum combination (balance) between pounds, price and costs, where an increase or decrease in any one of these will be minimal.

Producers have the least management influence over prices because they are price takers not price makers. Marketing management however should not be ignored because good managers can influence price by a few cents a pound or several dollars a head.

The profitability formula in more detail is:

$$\text{Profit or <Loss>} = [(\% \text{ calf crop} \times \text{weaning wt}) \times \text{Price}] - \text{Costs}$$

There are more “pounds sold” in cow-calf operations than “pounds of calves” - i.e., pounds of cull cows and bulls. However, “pounds of calves” contribute the most pounds and most income so this will be the focus in this presentation.

Breakeven Analysis

The profitability formula can be expressed another way by doing a breakeven analysis. Basically it determines what price the calves must bring to cover the costs of production. Simply stated:

$$\frac{\text{Annual Cow Cost}}{\text{Ave. Weaning Wt} \times \% \text{ Calf Crop}} = \text{Breakeven Price}$$

An example of an average producer would be:

$$\frac{\$300}{500 \times .85} = \frac{\$300}{425 \text{ lb}} = \$70.59/\text{cwt.}$$

Obviously if the sale price is above \$70.59/cwt a profit is realized and if the calves sell for less than \$70.59 a loss is incurred.

Table 1 shows several breakeven prices for varying annual cow costs, weaning weights and calf crop percentages. The bold breakeven prices reflect different management levels, for example breakeven prices under low management (\$116.67/cwt); average management (\$70.59/cwt); and high management (\$43.85). These breakeven prices do not consider pounds of cull cows and cull bulls sold per cow so the breakeven prices in actuality would be lower than those shown. However, the breakeven prices analysis is a single way to look at the profitability of a cow-calf operation. A producer could take the approach of breaking even on calf sales, then having sale of cull cows and bulls as profit.

Table 1. Break-even Price/cw for Commercial Cow/Calf Operations with Varying Calf Crop Percentages, Annual Cow Costs, and Weaning Weights

Calf Crop % Weaned	Annual Cow Cost	Average Calf Weight at Weaning, lbs.		
		400	500	600
95	\$350	\$92.10	\$73.68	\$61.40
	300	78.95	63.16	52.63
	250	65.79	52.63	43.85
85	350	102.94	82.35	8.63
	300	88.24	70.59	58.82
	250	73.53	58.25	49.02
75	350	116.67	93.93	77.78
	300	100.00	80.00	66.67
	250	83.83	66.67	55.56

The breakeven analysis can evaluate the economics of different management alternatives. A few examples are noted.

Example No. 1 - The average producer referred to earlier (\$70.59/cwt breakeven) determines that by using a growth implant, pounds of calf weaned per cow exposed could be increased 10 lb with an increased cost of \$2 per cow. What happens to the breakeven price?

$$\frac{\$302}{435 \text{ lb}} = \$69.42$$

Breakeven price is lowered from \$70.59/cwt to \$69.42 so this is an effective management decision to implement.

Example No. 2 - The average producer (\$70.59/cwt breakeven) determines that feed cost could be lowered \$50/cow but it would lower the calf crop from 85% to 80%. Is that a feasible management decision if weaning weight stays the same?

$$\frac{\$250}{500 \times .80} = \frac{\$250}{400 \text{ lb}} = \$62.50$$

This is obviously a profitable management decision, even though initially it doesn't sound logical to lower percent calf crop.

Example No. 3 - The average producer (\$70.59/cwt. breakeven) wants to raise calf crop from 85% to 90%. If weaning weight remains at 500 lb what is the largest increase in annual cow cost that can be accepted and still remain at a \$70.59/cwt breakeven? We can solve for x if 425 lb

would increase to 450 lb (500 x .90) as a result of increasing % calf crop.

$$\begin{array}{rcl} \$300 & = & \frac{x}{450 \text{ lb}} \quad 425 \times = 135,000 \\ 425 \text{ lb} & & x = \$317.65 \end{array}$$

If the producer could increase calf crop from 85% to 90% by not increasing cost per cow more than \$17.65, it would be a profitable management practice to implement.

Production and financial records are needed to make effective management decisions. An enterprise budget is a logical place to start. Observe the following major headings in the cow-calf enterprise budget in Table 2: Operating Receipts, Direct Costs, and Property and Ownership Costs. In this budget, receipts per cow are \$449.02 with cash operating expenses (\$234.37) and property and ownership costs (\$40.57) totalling \$264.95. This gives net receipts per cow of \$184.07.

Table 2: Colorado Livestock Enterprise Budget*				Year: 1989	
Enterprise: Cow/Calf, Spring-Calving				Budget I.D. Number: L2001004	
Region: East-Central					
<<Production and Marketing Assumptions>>				Cow Herd Size: 440	
Livestock Description	Units	Market Wts.	Market Month(s)	No. Head Marketed	% of Cow Herd
1. Str Calf	lbs.	500	Nov	198	45.00
2. Hfr Calf	lbs.	470	Nov	172	39.09
3. Cull Cows	lbs.	1,000		56	12.73
4. Cull Bull	lbs.	1,600		3	0.68
1.30% Cow Death Loss			91.00% Weaned Calf Crop		
13.00% Replacement Rate			2 Year Old First Calf Heifers		
<<Operating Receipts>>					
Livestock Sales: Description	Unit	Market Price	Prod. Per Cow	Value Per Cow	Total
1. Str Calf	lbs.	0.9628	225.00	216.63	95.317
2. Hfr Calf	lbs.	0.8568	183.73	157.42	69.265
3. Cull Cows	lbs.	0.5397	127.27	68.69	30.223
4. Cull Bull	lbs.	0.5757	10.91	6.28	2.764
5. Total Receipts				449.02	197.568
<<Direct Costs>>					
Feed, Purchased and Raised: Description	Unit	Price	Quantity Per Cow	Value Per Cow	Total
6. Pasture Rent	Aum	10.00	3.00	30.00	13.200
7. Aftermath	Aum	9.00	1.00	9.00	3.960
8. Hay (Alf./Gra./Tim)	Ton	85.00	0.45	38.25	16.830
9. State Lease	Aum	4.00	3.00	12.00	5.280
10. Salt & Mineral	lbs.	0.29	100.00	29.00	12.760
11. Total Feed Expenses				118.25	52.030
Other Operating Costs:					
12. Hired Labor				35.00	15,400.00
13. Repairs: Machinery, Bldg. & Fences				9.45	4,158.00
14. Machine Hire-Truck				1.24	547.75
15. Supplies				1.81	796.40
16. Vet. Medicine				7.50	3,300.00
17. Fuel, Oil, Lubricants				10.50	4,620.00
18. Breeding Fees, Preg Check, etc.				1.50	660.00
19. Miscellaneous				3.00	1,320.00
20. Utilities				1.85	814.00
21. Transportation				5.00	2,200.00
22. Marketing Expenses				8.55	3,762.00
23. Herd Bulls				8.52	3,748.80
24. Interest On Operating Capital			11.50%	12.20	5,368.02
25. Total Other Operating Costs				106.12	46,694.97
Livestock Purchased (or raised) for Resale:					
Description	Unit	Price	Quantity	Per Cow	Total
26. "		0.00	0.00	0.00	0
27. Total Livestock Purchase/Resale Costs				0.00	0
28. Total Cash Operating Expenses (Line 11 + Line 25)				224.37	98.725
Property and Ownership Costs:					
29. Depreciation				20.59	9,060
30. Taxes				6.28	2,754
31. Insurance				2.50	1,100
32. General Overhead (5.00% of Operating Costs)				11.22	4,936
33. Other				0.00	0
34. Total Property and Ownership Costs				40.57	17,851
35. Total Direct Costs (Line 28 + Line 34)				264.95	116,576
36. Net Receipts (Line 5 - Line 35)				184.07	80,992
(Returns to capital, land, mgt. and risk)					

Source: Colorado State University (Gutierrez, et.al.)

An analysis of the enterprise budget can tell when production (% calf crop and weaning weights) and costs may be out of line or on target. Some comparisons of enterprise budgets in similar geographical areas of Colorado show the following ranges in cash operating costs per cow:

Table 3. Selected Costs per Cow from Several Enterprise Budgets

Item	High	Low
Feed	\$171	\$100
Labor	41	13
Vet	12	4
Repairs	22	7

Source: Colorado State University (Gutierrez, et al.)

Breakeven prices on steers in Colorado have been shown to range from \$53.33 to \$95.45 in 1989.

Costs and Returns

Broilers have provided keen price competition for beef by keeping production costs low. In fact, broiler production costs have continued to decline over the past several years, while annual cow costs have increased significantly (Figure 1).

Because average annual cow costs have continued to rise over the past five years, beef producers say there is little they can do to reduce costs. They hope that cattle prices remain relatively high to cover their high costs of production.

Figure 2 shows how average cow-calf returns have fluctuated over the past 15 years. Most of the differences between high and low returns have been due to changes in calf prices. However, low-cost producers experience longer periods of positive returns and shorter periods of negative returns (losses) relative to high cost producers. This is demonstrated in part in Figure 3 where costs and returns for North Dakota cow-calf enterprises were analyzed. The low profit producers lost money during most of the years from 1978-1988. However the high profit producers made money during this same time period, even during 1982-1985 when calf prices were low.

Table 4 shows that there is considerable difference in production, costs and returns for cow-calf producers in Iowa. The high 1/3 producers had an average return of \$219.94 per cow, while the low 1/3 producers had a loss per cow of \$31.06. These patterns are similar in most states where a records analysis has been made. These records verify that a relatively high level of production (% calf crop and weaning weight) can be combined with low costs even in the same geographical areas.

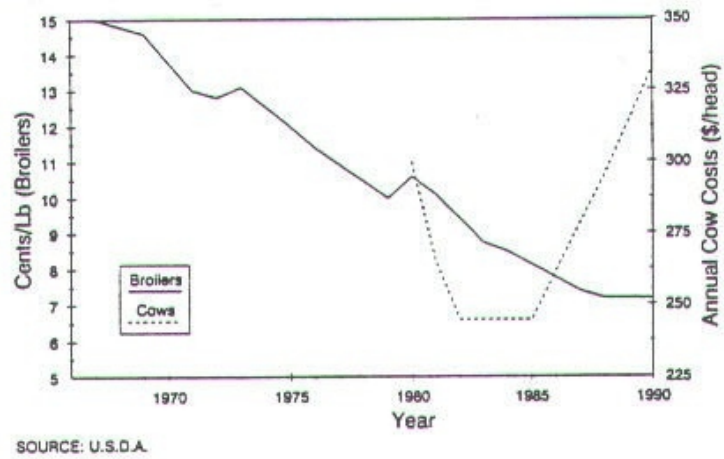


Figure 1. Production Costs for Broilers and Cows.

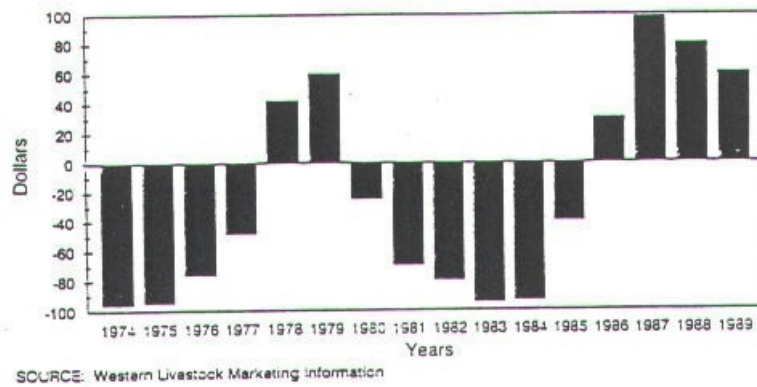


Figure 2. Estimated Average Cow/Calf Returns (\$/hd Over Cash Cost)

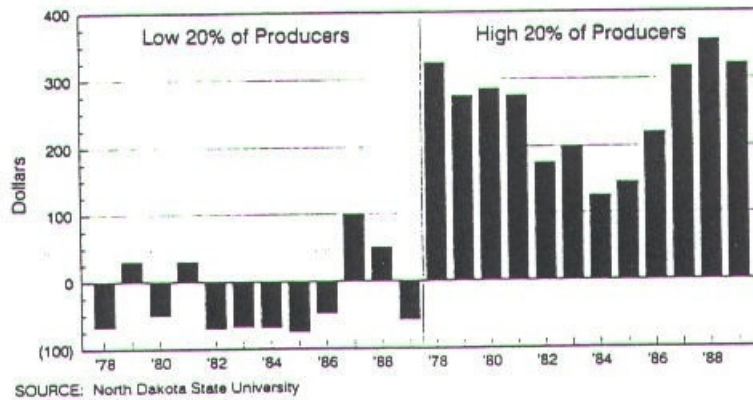


Figure 3. Profit and Loss per Cow in North Dakota, 1978-1989

Table 4. Cow Production, Costs and Returns

Production	Producers	
	High Third	Low Third
Number of Cows	92.9	90.6
Calf Weight	554	492
Calf Pounds per Cow	516	461
Cull Pounds per Cow	184	184
Total Production	\$591.62	\$541.43
Costs		
Feed Cost	\$150.76	\$208.43
Operating Cost	37.29	48.49
Operating Capital Charge	8.83	13.49
Fixed Capital Charge	66.97	84.24
Deprec., Tax, Insurance	12.82	23.81
Labor, Hired and Operator	40.03	49.20
Total Cost	316.71	427.79
Return to Management	219.94	(31.06)

Source: Iowa State University, 1990 Livestock Enterprise Summaries.

Feed costs should be carefully analyzed for potential cost reduction as feed costs typically comprise 45%-65% of the annual cash costs per cow. Table 5 shows that operations with more grazed forage and less consumption of harvested or stored feed significantly lowered feed costs.

Managing cow-calf resources implies matching the cows to their most economical resources. This suggests that in most of the Western and Great Plains states the cows should be medium-frame size, medium milk, with early sexual maturity where most of their feed comes from low-cost grazed forage.

Table 5. Analysis of Feed Costs

Cost Item	Producers 15 percent Below Average Costs	Producers 15 percent Above Average Costs
Pasture Grazing	181.5	169.5
Days	\$ 0.292	\$ 0.383
Cost per Day	\$53.00	\$61.88
Total Cost		
Stalk Field Grazing		
Days	93.6	67.7
Cost per Day	\$0.03	\$0.06
Total Cost	\$2.81	\$3.83
Stored Feed		
Total Days		
Feed Fed per Day (lb)	89.9	127.9
Cost per Day	36.4	50.3
Total Cost	\$ 0.48	\$ 0.87
Total Feed Cost	\$42.88	\$111.40
	\$98.69	\$180.11

Source: Iowa Beef Cattle Business Records