

Unit Costs of Production is the Key to Increasing Beef Cow Profits¹

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You Can Manage Best What You Measure

Why did some beef cow producers weather the last few years in reasonable shape in spite of a down market while others suffered severely? Could the answer be that some beef producers are low-cost producers and some are not. Low-cost producers are surviving the tough times fairly well.

Certainly, most beef cow producers perceive they are managing costs; however, my experience suggests beef cow producers have to first **measure** production costs before they can **manage** production costs. And, to measure production costs, beef cow producers must first measure production.

A beef producer's first step in coping with today's market and beyond is to know his/her unit cost of producing (UCOP) a hundred-weight of calf. The second step is to score his/her management program by comparing the UCOP to the average market price received for calves. The third step is to determine if he/she is a high UCOP or low UCOP producer by comparing the herd's UCOP to the average UCOP from a set of benchmark herds. The fourth and final step is to formulate a management strategy for increasing beef cow profits for the current year and beyond.

The Role of Weaning Weights Historically Over Estimated

Beef cow producers' never-ending focus on production efficiency through increased weaning weights, independent of the cost of the added weaning weights, has led many a commercial cattle producer down a primrose path. The maximum production efficiency formula pursued during the last two cattle cycles was fueled by the perception that increased average weaning weight leads to increased profits. Since heavier weaning weights imply higher production efficiency and higher gross incomes, many producers concluded that heavier weaning weights must also imply higher profits.

Left out of this maximum production efficiency formula were the added costs that accompany increased production. In reality, the added costs frequently outweighed the added gross incomes and as gross incomes went up, net incomes went down. But, because net incomes were not calculated in production efficiency measures, the decline in net income generally went unnoticed. This fundamental belief that profit is highly correlated with weaning weights and/or gross income is flawed.

¹This article appeared in Moorman's Feed Facts, Vol. 9, Beef 2, May 1999.

Unit Costs of Production

Costs of production can be measured on a per cow basis or on a per hundredweight of calf produced basis. Measuring production costs on a per cow basis is also fundamentally flawed as cost per cow does not take production into account. (Reducing costs per cow may also reduce production per cow.) Looking only at production costs per cow is just as serious of a management flaw as is looking only at total production.

I recommend a producer measure production costs as “*unit cost of producing a hundredweight of calf.*” Unit cost of production (UCOP) is the total costs associated with the beef cow herd divided by the total pounds of calf produced by that herd. UCOP simultaneously takes both physical production and costs of production into account.

UCOP gets its management power from the fact that all production costs and all units of physical production are both simultaneously taken into account in either the numerator or denominator. Determining UCOP enables a producer to directly compare his/her production costs to market price and, thereby, returns.

North Dakota’s IRM Herds

Considerable variation exists in UCOP among herds. North Dakota’s Integrated Resource Management (IRM) herds’ production of 1997 calves illustrates the magnitude of UCOP variation that can exist among herds. In 1997, North Dakota’s IRM cooperators averaged \$84 UCOP (calculated as a simple average). The one-third low UCOP herds averaged \$58 UCOP per hundredweight of calf produced, while the high UCOP herds averaged \$117 (difference of \$59). In general, the more intense the management, the lower the UCOP. The key point here is that management has direct control over UCOP.

Gross income (accrual adjusted) in 1997 averaged \$399 per cow for the IRM cooperators. The average gross income ranged from \$350 per cow for the high UCOP one-third of the IRM cooperators to \$420 per cow for the low UCOP one-third of the cooperators, a difference of \$70. The low UCOP group had the largest average gross income.

The average 1997 annual total cost of production for North Dakota’s IRM herds was \$382 per cow or \$1.05 per day. The high UCOP group averaged \$465 per cow or \$1.27 per day. The low UCOP group’s total costs averaged \$307 per cow or \$0.84 per day. Cost difference between the high UCOP and low UCOP groups was \$158 per cow or \$0.43 per day. Total costs per cow, like gross revenue per cow, do not accurately depict profitability.

Earned returns (profit) is the difference between total costs and gross income. The 1997, earned returns (profit) to unpaid family and operator labor, management, and equity capital averaged \$17 per cow, which reflects 1997s relatively low market prices; however, not all herds fared the same. The earned returns averaged \$114 per cow for the low UCOP group while the high UCOP group averaged a **loss** of \$115 per cow. This was a difference of \$229 per cow. Clearly, some beef cow producers did quite well while others did not.

Thirty-five percent of the \$229 difference (\$80) in earned net returns in North Dakota’s IRM herds was due to production efficiency. In turn, 65% of the difference (\$149) in earned net returns was due to economic efficiency (i.e. costs of production). Clearly, cost of production was the bigger

determinant of profitability; however, both production efficiency and economic efficiency impact profits. High profit herds seem to excel in both.

Management Score

A second contributor to the management power from UCOP is that it can be immediately compared to market price which allows for a quick and easy determination of profitability. Management score is the difference between a producer's UCOP and average market price received per hundredweight. Those producers with the highest management scores are the most profitable. Determining his/her management score easily enables a producer to compare returns between years, herds, and production regions.

Data from North Dakota's IRM cooperators also illustrate a large difference in management scores from herd to herd. The \$84 average UCOP for all North Dakota IRM cooperators can be easily compared to the average market price of \$87 received for calves in 1997, giving a management score of a positive \$3 per hundredweight. The \$3 difference gives the \$17 earned net returns per cow mentioned previously.

The low UCOP herds' average \$58 UCOP and average market price of \$80 per hundredweight gave a management score of \$22 per hundredweight. This implies an earned net return of \$114 per cow. The high UCOP herds averaged \$117 UCOP per hundredweight with an average market price of \$85, giving a management score of **minus** \$32 per hundredweight of calf produced. This implies the \$115 **loss** per cow presented previously. The average management score from the low-cost group to the high-cost group varied by \$35.

After producers measure UCOP and determine their management score, the third management action is to determine if they are a high or low UCOP producer. This is done of comparing their UCOP against the average from a set of benchmark herds, preferably from the same geographic region. Many state extension services now have IRM summaries that can be used as benchmark herds. A set of Northern Plains Benchmark Herds that Northern Plains beef cow producers can use is available. North Dakota's benchmark herds are summarized in Table 1. While considerable production data was analyzed for each IRM cooperator, the primary focus of Table 1 is benchmark cost of production. When comparing benchmarks, areas where your averages beat the benchmarks are your strengths. Conversely, your weak areas are evident where the benchmark averages are better than your herd's scores.

The fourth management action depends on the results of benchmark comparisons. If a producer has a high UCOP, the fourth management action is to reduce the UCOP by increasing both production and economic efficiencies. On the other hand, a low UCOP producer's fourth management action is to ensure the low UCOP is maintained or, more importantly, that UCOP is maintained below average market price.

Table 1				
North Dakota Benchmark Herds				
Item	Average	Low-Cost Group	High-Cost Group	Your Herd
No. of Herds	41	14	14	
Females Exposed	176	173	199	
Cows on Hand Jan. 1	149	163	135	
Capital Invested/Cow	\$2,112	\$1,997	\$2,351	
Debts/Cow	\$326	\$268	\$540	
Avg. Steer Price	\$87	\$80	\$85	
Avg. Weaning Wt., lb	556	560	536	
Gross Income/Cow	\$399	\$420	\$350	
Summer Grazing Costs	\$82	\$67	\$103	
Stored Feed Costs	\$162	\$126	\$183	
Total Feed Costs	\$248	\$196	\$288	
Total Costs/Cow	\$382	\$307	\$465	
Value Added/Cow	\$17	\$114	-\$115	
UCOP	\$84	\$58	\$117	
Avg. Market Price	\$87	\$80	\$85	
Management Score	\$3	\$22	-\$32	

Conclusion

Costs of production absolutely must be part of the profit formula. Measuring the unit cost of producing a hundredweight of calf is the recommended way to measure costs of production. Beef cow producers must measure their unit cost of production cost before they can manage it; otherwise, they cannot determine if progress is being made. This article defines unit cost of production (UCOP) and describes how to use it to increase profits from the beef cow herd. UCOP represents an all encompassing measure of both production efficiency and economic efficiency and is the single most important figure a beef cow producer can calculate, bar none.



The National Cattlemen's Beef Association and local state extension services offer Integrated Resource Management (IRM) programs. For example, North Dakota's IRM Educational Program offers a seven-step program designed to help beef cow producers reduce their unit cost of production.

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