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Carol J. Cumber
South Dakota State University, carol.cumber@sdstate.edu

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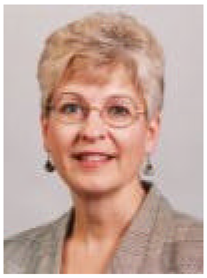

Determinants of Profitability in the SD Beef Cow-Calf Enterprise

by

Carol J. Cumber
Associate Professor

Introduction

South Dakota has not been spared the national trend of fewer, larger farms generating greater percentages of its agricultural production. According to SDSU Ag Economists, the trend that began in the 1930's shows no signs of abating. Depending on whether the more rapid decline of 1987-1997 continues, or the more moderate decline of 1978-1987 occurs, predictions of farm numbers and farm size in the year 2020 range from 20,000 to 23,000 farms, which is an annual decline of 1.3 – 1.8%. This translates into average farm size increasing from a range of 36 – 52%, or 1,930 - 2,160 acres.[i]

South Dakota continues to rank as one of the top ten states for all cattle and calves, beef cows that calved, and cattle in feed-all feedlots. The South Dakota beef industry, with 1.8 million head of cattle in 2000, remains our state's largest agricultural enterprise, both in the number of farms that raise beef cattle, and in sales volume generated. This enterprise has followed the general trend in agriculture of fewer, larger operations. The number of beef cows per herd, however, has significantly increased.

Given the central role of beef cow-calf production in SD agriculture, coupled with the realization that this production is in the hands of fewer and fewer producers, understanding what factors contribute to the profitability of the beef cow-calf enterprise is imperative. The pain of economic and personal loss that accompanies an unprofitable enterprise cannot be overstated, regardless of the enterprise size. The movement toward fewer, larger, operations, however, suggests that the potential profitability or unprofitability of an individual enterprise will in the future also have greater repercussions for the industry at large. Therefore, the importance of increasing our understanding of what contributes to the profitability of the beef cow-calf enterprise is crucial, not only for the individual producer, but for the SD beef cow-calf industry as a whole. This article will discuss a continuing investigation of the determinants of profitability in the SD beef cow-calf enterprise.

Size Changes in South Dakota's Beef Cow/Calf Enterprise

Year	Number of Beef Cows per Herd			
	1-49	50-99	100-499	500+
1986	52.00%	23.00%	25.00%	0.00%
1999	42.90%	23.20%	31.80%	2.10%
Change	-9.10%	0.20%	6.80%	2.10%

Source: UDSA-SDASS

Standardized Performance Analysis

The study of profitability links production and economics. There have been many attempts to identify determinants of profitability in the beef cow-calf enterprise. Historically, these attempts were hindered by a noticeable lack of common understanding of how profitability was measured. Different studies using different methodologies and terminology made comparisons difficult. Making measurements of profitability even more complicated was the realization that many operations lack adequate financial and economic cost of production data.

To overcome methodology and terminology problems, Standardized Performance Analysis (SPA) was developed by the National Cattleman's Association.[ii] SPA is an analytical tool that links production and financial records. Extension educators and specialists, veterinarians, and various groups knowledgeable in the SPA technique work with producers to record in a standardized way production measurements such as reproduction rates, production grazing and raised feed factors. Cash and non-cash expenses are included as financial measurements. A primary goal of SPA is to gather timely and useful data in a uniform and consistent manner to enable producers to make more informed decisions. The results of this analysis can be used to assist producers in identifying strengths in their operations and areas that may need improvement.

It's useful to view profit as a set of relationships. For example, according to Dr. Barry Dunn, SDSU Range Livestock Production Specialist, high profit as defined by Return on Assets (ROA) can come from various components, such as levels of production, market value of the production, and the investment required to build and maintain productive capacity.[iii]

Data on 148 Northern Great Plains cow-calf herds has been gathered and analyzed for years 1991-1999 by Dunn. Return on Assets, which incorporates return to invested capital, labor and management, was deemed to be an appropriate measure of profitability. Using ROA as the profitability measurement tool, the data set was divided into three profit groups, with High Profit representing those operations with ROA greater than +12.9%, Medium Profit referring to an ROA between - 6.7% to +12.9%, and Low Profit defining those situations where the ROA was lower than –6.7%.

In this study, particular attention was given to identifying characteristics in the high profit category, with the hope of gaining insight that could be communicated to producers on how profits can be sustained, or for those producers in lower profit situations, what techniques might be used to increase profitability in their operations. Dunn found that of the 23 SPA production measurements used to describe the beef cow-calf enterprise, only weaning percentage was found to be significantly higher in the High Profit group in comparison to Medium and Low Profit producers. High and Medium Profit operations had higher calving percentages and weaned more pounds per cow exposed than did Low Profit enterprises. Medium Profit enterprises were found to wean heavier calves than Low Profit. There were no statistically significant differences between High and Medium Profit enterprises in the following areas: size of operation, weaning weight, pregnancy percentage, calving percentage, female replacement rate, the measures of calving distribution, pounds of weaned calf per cow exposed, or stocking rate.

Based on SPA financial measurements, High Profit enterprises were observed as having fewer total dollars invested than did Medium Profit, based on a per 100 lb. of weaned calf basis. They had lower depreciation expenses and total expenditures than the other profit categories. Medium and Low Profit operations also were identified as having lower revenue, higher breakevens and lower net income than the High Profit category producers. In sum, while enterprises in this sample, whether Low Profit or High Profit operations, had comparable levels of investment and equity, they had significantly different levels of expenses and total revenues.

An Additional Step

Historically, the emphasis on determining profitability in the beef cow/calf enterprise has been on empirical analysis of production and financial practices. Standardized Performance Analysis (SPA) has proved to be a very useful tool to this end. While collecting production and financial information is essential in contributing to our understanding of profitability, it's important to recognize that other factors may also play a role. Management practices, family structure, decision-making processes and attitudinal issues may contribute to success, even when the resource base is similar among farming operations. Combining the findings of SPA with an approach to examine these relatively unexplored areas could yield even richer data.

Using the SPA data from the Dunn study as a foundation, SDSU graduate student Amy Singrey and I developed and administered a survey instrument to gain further insight into beef cow/calf producers' management practices and operations. Survey sections included basic demographics, goal setting and decision-making, and views on intuition and risk. A section on operational practices focused on marketing strategies, record keeping and time management. The producers were asked for their perceptions regarding the state of their own operation and the beef cow-calf enterprise in general.

Additionally, producers were asked to identify the strengths, weaknesses, opportunities and threats their operations experienced.

Nineteen SD producers from 12 counties had completed a 2000 SPA. The following year all were personally interviewed and given the survey instrument. None of the producers were aware of which profitability category (High, Medium, Low) their operations were in at the time of the interview. Seventeen of the nineteen producers felt their cow/calf operations were at least slightly profitable. In actuality, two of the operations fit the low profit category of ROA being lower than –6.7%, ten fit the Medium Profit category of ROA within the range of –6.7% to 12.9%, and seven producers fit the High Profit category of ROA over 12.9%.

Survey results indicated that in the area of goal setting, only High Profit producers set short-term goals for nutrition, herd management, and increasing herd size. Interestingly, profitability was the most important goal mentioned by both Low Profit producers, half of the Medium Profit producers, but only two out of seven of the High Profit producers.

Producers were asked what personal attributes would give them a competitive edge in their operation. Common responses included a willingness to improve the operation, continuing education, diversification, and good management skills. A willingness to seek advice from others, change, and work harder also were noted. Nearly all the High Profit producers felt they possessed those attributes. A willingness to seek advice was nearly double that of Medium Profit producers, supporting research that suggests that seeking advice, gathering information and collaborative decision-making is important for successful operations.

Sixteen of the nineteen beef cow/calf producers indicated that their operation was a sole proprietorship. This suggests that producers are either unaware of, or not receptive to the potential risk deduction, inheritance and tax protection accorded them under a corporate structure. In general, producers viewed access to information, production technology and access to computers and the Internet as strong opportunities for their operation. They regarded agricultural policy and large agribusiness as threats. In relation to operations, High Profit producers were more conscious of keeping feed costs low through goal setting, record keeping, decision-making techniques and continuous training. No significant differences were found among the profit categories in relation to risk taking, intuition, marketing tools or management style.

Type of Goals Set by Surveyed Beef Cow/Calf Producers*

Short-Term Goals	**Long-Term Goals**
Low Profit Producers	Low Profit Producers
Weaning weights	Improve grazing/pasture rotation
Breeding	Decrease debt
Improve facilities	Herd size
Winter preparation	Decrease costs
Medium Profit Producers	Medium Profit Producers
Weaning weights	Increase profit
Breeding	Breeding
Improve grazing/pasture rotation	Improve grazing/pasture rotation
Decrease Debt	Decrease costs
Increase Profit	Resource management
Improve facilities	Conservation practices
Improve record keeping	Performance of cattle (production)
Improve marketing skills	Longevity
Produce a consistent product	
Downsize frame score of cows	
High Profit Producers	High Profit Producers
Weaning weights	Breeding
Breeding	Improve grazing/pasture rotation
Improve grazing/pasture rotation	Decrease costs
Decrease Debt	Increase profit
Increase Profit	Improve quality of product
Nutrition	Increase Herd Size
Herd management	
Increase Herd Size	

*Total producers in each category Low 2, Medium 10 and High 7

Conclusion

Through quantitative standardized performance measures such as SPA coupled with qualitative measures such as assessment of goal setting and decision-making activity and perceptions of enterprise strengths, weaknesses, opportunities and threats, we can gain greater understanding of the profitability determinants of the beef cow-calf enterprise. It would be misguided to draw broad conclusions from a relatively small sample of producers based on one year's survey data with an uneven distribution of producers in the three profit categories. Nonetheless, the qualitative study is an informative exploratory step in providing richer data for beef cow-calf producers about the SD Beef Cow-

Calf enterprise. As more SD beef cow-calf producers participate in upcoming SPA workshops and surveys, the expanded database will provide greater opportunities for extending our knowledge of what makes the beef cow-calf enterprise profitable.

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[i] For further discussion of the changing structure of SD agriculture, refer to Lance Nixon's article, "Our ag's starting to fit the industrial-world 'norm'," in SDSU's Farm & Home Research magazine, Vol 52, Number 4, pp. 4-7.

[ii] Guidelines for production and financial performance analysis for cow-calf producers, Cow-Calf SPA. National Cattlemen's Association, Denver, CO. USDA-CSREES, Washington, D.C. pp 1-74.

[iii] For further information, refer to these publications by Barry Dunn: "Measuring Cow-Calf Profitability and Financial Efficiency," BIF 2002 Proceedings, and "Characterization and Analysis of the Beef Cow-calf Enterprise of the Northern Great Plains Using Standardized Performance Analysis," SDSU Ph.D. Thesis, 2000.

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Economics Department
South Dakota State University — Phone: 605-688-4141
Box 504 Scobey Hall — Fax: 605-688-6386
Brookings, SD 57007-0895 — E-Mail: Penny_Stover@ sdstate.edu

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