

Discovering Value in North Dakota Calves; The Dakota Feeder Calf Show Feedout Project VII

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Abstract

North Dakota cattle producers continue to explore the value of the calves they produce by measuring feedlot performance and carcass characteristics. The Dakota Feeder Calf Show Feedout project was developed to discover the actual value of spring-born beef steer calves, provide comparisons between herds, and benchmark feeding and carcass performance. Cattle consigned to the feedout project averaged 638.2 lbs. upon delivery to the Carrington Research Extension Center Livestock Unit on October 20, 2007. After an average 197-day feeding period with 1.09% death loss, cattle averaged 1308.7 lbs. (at plant, shrunk weight). Average daily feed intake per head, as fed, was 32.6 lbs. while pounds of feed required per pound of gain were 9.8. Diet dry matter was 78%. The pen-of-three calves averaged 402 days of age at harvest. Overall pen average daily gain was 3.33 lbs. Feed cost was \$0.571 per lb. and total cost of gain without interest was \$0.771. The cattle were marketed on May 5, 2008, and marbling scores averaged 303.6 (low select). Profit before interest expense ranged from \$70.23 per head for pen-of-three cattle with superior growth and carcass traits to a loss of \$-117.05 per head return for a pen-of-three with poorer feedlot and carcass performance. The feeding and carcass value of spring-born calves can be determined with participation in a feedout project.

Introduction

Determining calf value is a continuing experience for cow-calf producers. To remain competitive with other livestock and poultry in the meat industry, cow-calf producers need to identify superior genetics and management. At time of bull selection, a producer must also estimate the type of animal desired by buyers 1½ -2 years before sale. Marketplace premiums are provided for calves that have exceptional feedlot performance and produce a high-quality carcass. In addition, superior, cost-effective feeding performance is needed to justify the expense of feeding cattle past weaning. Since North Dakota feeds are low cost and climate is favorable, low feeding cost per pound of gain can be accomplished. This feedlot project was developed to provide cattle producers with an understanding of cattle genetics and cattle feeding in North Dakota.

Materials and Methods

The calves were received in groups of three or four on October 20, 2007, at the Turtle Lake Weighing Station, Turtle Lake, ND, for weighing, tagging, processing and exhibition. The calves were evaluated for conformance and uniformity with the judges providing a discussion to the owners at the weighing in event.

The calves were then shipped to the Carrington Research Extension Center, Carrington, ND, for feeding. Prior to shipment, calves were vaccinated, implanted, dewormed, and treated with prophylaxis tetrads (oxytetracycline). Calves were then sorted and placed on corn-based receiving diets. After a two-week adaptation period, the calves were moved on to a corn-based 80% concentrate diet. Cattle were weighed every 28 days and updated performance reports provided to the owners.

An open house was held on February 7, 2008, at the Carrington Research Extension Center Livestock Unit, where the owners reviewed the calves and discussed marketing conditions.

The cattle (183 head consigned) were harvested on May 4, 2008. Cattle were sold to Tyson Fresh Meats, Dakota City, NE, on a grid basis with premiums and discounts. Carcass data was collected after harvest. These steers were the subjects of a research trial assessing the effects of disposition on feedlot performance and carcass traits are reported elsewhere in this publication.

Ranking in the pen-of-three competition was based on the best score obtained. Overall score was determined by adding the index score for weight per day of age (20% of score), average daily gain on test (20% of score), marbling score (20% of score), and retail product value divided by weight per day of age (40% of score). The Dakota Feeder Calf Show provided cash awards for the top placing pens of steers.

Results and Discussion

Cattle consigned to the Dakota Feeder Calf Show Feedout project averaged 638.2 lbs. upon delivery to the Carrington Research Extension Center Livestock Unit on October 20, 2007. After an average 197-day feeding period cattle averaged 1308.7 lbs. (at plant, shrunk weight). Two deaths or 1.09% death loss, occurred during the feeding period. Average daily feed intake per head was 32.6 lbs., as fed basis, and 25.4 lbs., dry matter basis. Pounds of feed required per pound of gain were 9.8, as fed basis, and 7.6 lbs., dry matter basis.

Overall feed cost per pound of gain was \$0.571. Overall yardage cost per pound of gain was \$0.075. Combined cost per pound of gain including feed, yardage, veterinary, trucking and other expenses except interest was \$0.771.

The number of cattle consigned was 183 of which 144 competed in the pen-of-three contest. Cattle were implanted with Synovex S and re-implanted with Synovex Choice during the feeding period.

The carcass characteristics were collected and used in calculating indexes for scoring. The cattle were harvested May 5, 2008, contained USDA Quality Grades at 43.9% Choice or better (including 7.2% Certified Angus Beef), 52.8% Select and 3.3% Standard and USDA Yield Grades at 14.4% YG1, 43.4% YG2, 35% YG3, 6.6% YG4, and 0.6% YG5.

Carcass value per cwt was calculated by using the actual base carcass price plus premiums and discounts. Grid prices were: May 5, 2008 - \$150.71 Choice YG3 base with premiums of Prime \$11.41, CAB \$3.5, YG1 \$4.00, YG2 \$2.00, and discounts of Select \$-2.77, Standard \$-9.56, YG4 \$-13.5, YG5 \$-19.33.

Retail product value was calculated as carcass weight, pound * percent retail product *(((carcass value per cwt /100)/ retail product yield) / retail product markup) where retail product yield = 0.65, and retail product markup = 0.75. Percent retail product value was calculated as 0.825 - (calculated yield grade *0.05).

Results from the calves selected for the pen-of-three competition are listed in Table 1. Overall, the pen-of-three calves averaged 402 days of age and averaged 1308.7 lbs. per head at harvest. Overall pen-of-three average daily gain was 3.44 lbs., while weight per day of age was 3.28 lbs. Overall pen-of-three marbling score was 312.5 or low select marbling category. Retail product value averaged \$1355.75 per head. Retail product value divided by day of age averaged \$3.36.



Dakota Feedout calves.

The highest combined index score per pen-of-three was 3.367. While the highest overall scoring pen did place first in marbling score, it did not place first in harvest weight, weight per day of age, feedlot average daily gain and percent retail product value divided by weight per day of age. Correlation between index score total and profit was fair ($r = 0.5779$). Correlations between profit and average daily gain, weight per day of age, marbling score, or percent retail product value divided by weight per day of age are shown in Table 2.

Table 2. Correlation between profit and various production measures.

	Correlation coefficient
Profit and Index Score	0.5779
Profit and Average Birth Date	0.1962
Profit and Average Harvest Weight	0.3157
Profit and Average Daily Gain	0.5134
Profit and Weight per Day of Age	0.2654
Profit and Marbling Score	0.2257
Profit and Percent Retail Product Value divided by day of age	0.4457

Profit or loss was calculated using initial calf price as price per 100 pounds, $\$ = 149.04185 - (0.05201 * \text{initial calf weight})$. Profit or loss accounted for initial calf price, feed, yardage, veterinary, freight, brand inspection, beef checkoff, ultrasound and carcass data collection costs. Interest costs on cattle or feeding expenses were not included in calculating profit or loss. Final carcass value was assessed using the actual grid pricing for the harvest group.

Overall, cattle feeding provided a \$-24.51 per head loss before interest expense was deducted. However, the top profit pen-of-three calves with superior genetics returned \$70.36 per head while bottom pen-of-three calves returned \$-117.05 per head loss. The average of the top five pens of steers averaged \$26.53 per head while the average of the bottom five pens of steers averaged \$-62.95 per head. The overall pen-of-three average was \$-4.06 per head loss.

Implications

Calf value is improved with superior carcass performance. Feedlot performance is also important for increased weight gain and heavier carcass weights. Exceptional average daily gains, weight per day of age, marbling score and retail product value can be found in North Dakota beef herds. Feedout projects provide a source of information for cattle producers to learn about genetics and discover cattle value. ♦