

## **Discovering Value in North Dakota Calves: The Dakota Feeder Calf Show Feedout Project 2003-2004**

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**T**he Dakota Feeder Calf Show provided cattle producers with an understanding of cattle genetics and cattle feeding in North Dakota. Determining calf value is a continuing experience for cow calf producers. At time of bull selection, a producer must estimate the type of animal desired by buyers 1½- 2 years before sale. In this program producers to sell cattle based on the end-value meat price. 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.

The calves were received in groups of three or four on October 13, 2003, at the Turtle Lake Weighing Station for weighing, tagging, processing and showing. The calves were evaluated for conformation and uniformity with the judges providing a discussion to the owners.

The calves were then shipped to the NDSU Carrington Research Extension Center, Carrington, ND, for feeding. Upon arrival, calves were treated with prophylaxis tilmicosin. Calves were sorted and placed on a receiving trial comparing corn mixed with field peas, lentils, and chickpeas as grain sources. On November 24, 2003, calves were moved on to a corn-based 80% grain diet. Cattle were implanted with Synovex Choice at 91 days on feed. Cattle were weighed periodically and reports provided to the owners.

An open house was held on February 6, 2004, at the NDSU Carrington Research Extension Center Livestock Unit, where the owners reviewed the calves and discussed marketing conditions. Backfat and marbling were estimated by ultrasound on March 23, 2004, and the calves were sorted into market groups based on back fat, marbling and live weight.

The first market group of cattle (41 head) was harvested on April 2, 2004. The second sell group (80 head) was harvested on May 5, 2004. The third sell group (20 head) was harvested on May 13, 2004, and the last sell group (34 head) was harvested on May 27, 2004. Cattle were sold to Tyson Fresh Meats, Dakota City, NE, on a grid basis with premiums and discounts. Carcass data was collected after harvest.

Cattle consigned to the Dakota Feeder Calf Show Feedout project averaged 577.5 lbs upon delivery to the Carrington Research Extension Center Livestock Unit on October 13, 2003. After an average 201-day feeding period with 1.69% death loss, cattle averaged 1252.8 lbs (at plant, shrunk weight). The early sell group (41 head) averaged 1236.1 lbs (shrunk) at harvest. The second sell group (80 head) averaged 1295.25 lbs. (shrunk) at harvest. The third sell group (20 head) averaged 1258.5 lbs (shrunk) at harvest and the last sell group (34 head) averaged 1170.0 lbs (shrunk) at harvest. Average daily feed intake per head was 28.74 lbs, as fed basis, and 20.9 lbs, dry matter basis. Pounds of feed required per pound of gain were 8.85, as fed basis, and 6.44 lbs, dry matter basis.

Overall feed cost per pound of gain was \$0.317. Overall yardage cost per pound of gain was \$0.077. Combined cost per pound of gain including feed, yardage, veterinary, trucking and other expenses except interest was \$0.453.

The number of cattle consigned was 178 of which 126 competed in the pen-of-three contest. Carcass characteristics were collected and used in calculating indexes for scoring. The first

market group, harvested April 2, 2004, contained USDA Quality Grades at 60.1% Choice or better (including 17.0% Certified Angus Beef) and 39.9% Select and USDA Yield Grades at 24.4% YG2, 70.7% YG3, and 4.9% YG4. The second market group, harvested May 5, 2004, contained USDA Quality Grades at 1.25% Prime, 52.5% Choice (including 11.25% Certified Angus Beef), 45% Select, and 1.25% Standard and USDA Yield Grades at 6.25% YG1, 45% YG2, and 48.75% YG3. The third market group, harvested May 13, 2004, contained USDA Quality Grades at 50% Choice, 45% Select, and 5% Standard and USDA Yield Grades at 65% YG2, and 35% YG3. The last market group, harvested May 27, 2004, contained USDA Quality Grades at 44.2% Choice, 52.9% Select, and 2.9% Standard and USDA Yield Grades at 8.8% YG1, 70.6% YG2, and 20.6% YG3.

Carcass value per cwt was calculated by using the actual base carcass price plus premiums and discounts. Grid prices were: April 2, 2004 - \$130.00 Choice YG3 base with premiums of CAB \$8, YG2 \$2.50, and discounts of Select \$-6, and YG4 \$-20; May 5, 2004 - \$142.10 Choice YG3 base with premiums of Prime \$23.65, CAB \$6.12, YG1 \$6.50, YG2 \$2.50, and discounts of Select \$-9.60, Standard \$-11.90; May 13, 2004 - \$146.72 Choice YG3 base with premiums of YG2 \$2.50, and discounts of Select \$-12.40, Standard \$-14.70; and May 27, 2004 - \$143.08 Choice YG3 base with premiums of YG2 \$2.50, and discounts of Select \$-15.25, NR \$-17.55.

Retail product value was calculated as carcass weight, lb. \* 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).

Overall, the pen-of-three calves averaged 397.4 days of age and averaged 1261.5 lbs per head at harvest. Overall pen-of-three average daily gain was 3.40 lbs while weight per day of age was 3.19 lbs. Overall pen-of-three marbling score was 415.8 or 15.8% into low choice/small marbling. Retail product value averaged \$1545.62 per head. Retail product value divided by weight per day of age averaged \$3.90.

The highest combined index score per pen-of-three was 3.57. While the highest overall scoring pen did not place first in average daily gain, weight per day of age, marbling score, or percent retail product value divided by weight per day of age and profit, the pen did rank first for harvest weight 1367.5 lbs.

Profit or loss was calculated using initial calf price as price per pound, \$ = 147.6253 – (0.05781 \* initial calf weight). Profit or loss accounted for initial calf price, feed, yardage, veterinary, freight, brand inspection, beef check off, 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 \$112.27 profit before interest was included. However, the top profit pen-of-three calves returned \$279.69 per head while the bottom pen-of-three calves returned -\$267.10 due to death loss.

Calf value is greater with superior carcass traits. Feedlot performance is also important for increased weight gain and heavier carcass weights. While feed efficiency was not measured for producer groups of calves, it is a significant factor in profit. 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.