Discovering Value in North Dakota Calves: 20 Years of the Dakota Feeder Calf Show Feedout

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North Dakota cattle producers are identifying cattle with superior growth and carcass characteristics by participating in the Dakota Feeder Calf Show. Average profitability between consignments from the top five herds and the bottom five herds was $99.56 per head for the 2019-2020 feeding period. Average profit per steer was $88.74 over the 19 year period from 2001 to 2020.

Summary

The Dakota Feeder Calf Show feedout project helps North Dakota cattle producers discover the actual value of their spring-born beef steer calves, provides comparisons among herds, and benchmark feeding and carcass performance. For the 2019-2020 feedout project, cattle consigned to the feedout project were delivered to the Carrington Research Extension Center Livestock Unit on October 19, 2019. After a 213-day feeding period with 2.56 percent death loss, cattle averaged 1344.7 pounds (shrunk harvest weight). Feed required per pound of gain was 6.4 (dry-matter basis). Overall pen average daily gain was 3.35 pounds. Feed cost per pound of gain was $0.464 and total cost per pound of gain was $0.728. Profit ranged from $165.95 per head for pen-of-three cattle with superior growth and carcass traits to $41.52 per head (no death loss). For the 19 year period, 2001 – 2020, the average feeding profit was $88.74 per steer per year and the range in profit was ($137.17) to $582.99 per head. Substantial variability in the feeding and carcass value of spring-born calves continues to be discovered through participation in the feedout project.

Introduction

Cow calf produces need to remain competitive with other livestock and poultry in the meat industry. By determining calf value in a feedout program, cow-calf producers can identify superior genetics under common feedlot management. Marketplace premiums are provided for calves that have exceptional feedlot performance and produce a high-quality carcass.

Cost-effective feeding performance is needed to justify the expense of feeding cattle past weaning. Since North Dakota has low-cost feeds and a favorable climate, low cost per pound of gain can be accomplished.

Combining the low cost of gains with the identification of superior cattle, this ongoing feedlot project provides cattle producers with an understanding of cattle feeding and cattle selection in North Dakota.

Experimental Procedures

The Dakota Feeder Calf Show was developed for cattle producers willing to consign steer calves to a show and feedout project. The first feedout was started in October 2001 with finished cattle sold in May 2002. The project has been continued yearly since 2001.

For the 2019-2020 feedout period, the calves were received in groups of three or four on Oct. 19, 2019, at the Turtle Lake Weighing Station, Turtle Lake, N.D., for weighing, tagging, veterinary processing and showing. The calves were evaluated for conformation and uniformity, with the judges providing a discussion to the owners at the beginning of the feedout. The number of cattle consigned was 117, of which 100 competed in the pen-of-three contest.

The calves were shipped to the Carrington Research Extension Center, Carrington, N.D., for feeding. Prior to shipment, calves were vaccinated, implanted with Synovex-S, dewormed and injected with a prophylactic long-acting antibiotic.

Calves were sorted and placed on corn-based receiving diets. After an eight-week backgrounding period, the calves were transitioned to a 0.62 megacalorie of net energy for gain (Mcal NEg) per pound finishing diet. Cattle were weighed every 28 days, and updated performance reports were provided to the owners. Cattle were re-implanted with Synovex-choice.

An open house was held on February 7, 2020, at the Carrington Research Extension Center Livestock Unit, where the owners reviewed the calves and discussed marketing conditions.

The cattle were harvested on May 20, 2020 (114 head). The cattle were sold to Greater Omaha Packing Co., Omaha, Neb., on a flat bid carcass basis, with no premiums and discounts based on carcass quality. Carcass data was not collected after harvest due to packing plant restraints resulting from the COVID 19 pandemic.

Results and Discussion

For the 2019-2020 feeding period, cattle consigned to the Dakota Feeder Calf Show feedout project averaged 596.2 pounds upon delivery to the Carrington Research Extension Center Livestock Unit on October 19, 2019. After an average 213-day feeding period, cattle averaged 1,344.7 pounds (at plant, shrunk weight). Death loss was 2.56 percent (three head) during the feeding period.

Average daily feed intake per head was 32.7 pounds on an as-fed basis and 21.6 pounds on a dry-matter basis. Pounds of feed required per pound of gain were 9.7 on an as-fed basis and 6.4 pounds on a dry-matter basis.

The overall feed cost per pound of gain was $0.464. The overall yardage cost per pound of gain was $0.102. The combined cost per pound of gain, including feed, yardage, veterinary, trucking and other expenses except interest, was $0.728.

Calves were priced by weight upon delivery to the feedlot. The pricing equation ($ per 100 pounds = (-0.008990915* initial calf weight, pounds) + 151.2910293) was determined by regression analysis on local livestock auction prices reported for the weeks before and after delivery.

The top-profit pen-of-three calves with superior genetics returned $165.95 per head, while the bottom pen-of-three calves returned $41.52 per head. The average of the five top-scoring pens of steers averaged $152.66 per head, while the average of the bottom five scoring pens of steers averaged $53.10 per head.

For the 19-year feeding period, 2001-2020, the average per consigned steer profitability was $88.74. The range of profitability was $-137.17 to 582.99 per head. Average daily gain was fairly similar over the years. Feed costs per pound of gain averaged $0.48 over 19 years. Feed cost per pound of gain was affected more by feed price changes than cattle gain. The percent USDA Choice carcasses has increased from 2001 to 2019 while ribeye area and back fat thickness at slaughter have remained similar. Cattle weight (average 614 pounds) upon entry into the feedout has been similar over the years while final weight at slaughter has increased (1207 and 1344 for years 2002 and 2020 respectively).

Prices for feeder cattle and finished cattle have changed over the past 19 years. Steer calf prices per hundred weight have doubled and even tripled for certain years. Finished steer prices per hundred weight have also doubled. Cattle prices, feed prices and profitably were quite variable during the 19-year feeding period. However, average cattle performance and carcass characters have been similar during the 19-year feeding period.

Implications

Exceptional average daily gains, weight per day of age, and harvest weights can be found in calves produced from North Dakota beef herds. Feedout projects provide a source of information for cattle producers to learn about feedlot performance and individual animal differences, and discover cattle value.

Dakota Feeder Calf Show Feedout steers.

Table 1. Selected performance parameters for the Daktoa Feeder Calf Show Feedout 2019 - 2020.

Year	Profit per head	Feed cost per pound Gain	Average Daily Gain	Choice	Rib Eye Area	Backfat	In Weight	In Price	Out Weight	Out Price
	$	$	lb.	%	sq. in.	in.	lb.	$/cwt	lb.	$/cwt
2001-02	-19.26	0.252	3.04	49.6	13.1	0.42	602.4	95.68	1207.9	67.42
2002-03	112.27	0.326	3.36	48.0	13.3	0.42	589.0	84.06	1240.3	73.21
2003-04	116.76	0.317	3.25	57.1	13.3	0.44	577.5	114.17	1257.8	87.1
2004-05	94.08	0.307	3.09	68.1	14.2	0.43	613.5	123.53	1308.6	91.82
2005-06	-86.28	0.280	3.18	57.5	12.9	0.53	607.6	128.53	1249.5	79.33
2006-07	107.89	0.471	3.02	60.3	13.7	0.49	639.7	116.85	1298.2	99.24
2007-08	-24.51	0.571	3.34	43.6	13.7	0.42	639.2	115.24	1308.7	94.02
2008-09	-0.46	0.553	2.98	67.1	13.5	0.42	648.5	98.82	1260.1	87.49
2009-10	296.59	0.378	3.28	56.3	13.7	0.56	625.0	97.05	1277.5	99.01
2010-11	167.28	0.737	3.29	72.3	14.0	0.46	615.9	116.64	1272.5	117.87
2011-12	85.72	0.710	3.63	76.0	15.6	0.36	596.4	150.06	1353.6	123.62
2012-13	-50.15	0.865	2.77	84.2	13.6	0.51	608.9	157.23	1224.2	128.7
2013-14	324.28	0.575	3.53	75.8	14.0	0.49	600.3	176.88	1313.6	151.36
2014-15	-37.39	0.431	3.36	79.8	13.4	0.53	629.3	272.79	1353.6	161.38
2015-16	-137.17	0.519	3.21	72.2	14.0	0.46	621.1	215.36	1325.0	132.23
2016-17	582.99	0.494	3.15	76.8	13.7	0.47	623.8	123.38	1334.9	142.92
2017-18	37.17	0.474	3.13	81.3	13.6	0.53	634.2	168.73	1311.1	124.11
2018-19	32.49	0.487	3.25	68.8	13.3	0.46	604.9	162.94	1325.4	118.38
2019-20	83.71	0.464	3.35	*	*	*	596.2	145.93	1344.7	112.46
Average	88.74	0.48	3.22	66.38	13.70	0.47	614.39	140.20	1293.01	110.09
Standard Deviation	167.67	0.16	0.20	12.20	0.58	0.05	18.93	46.03	43.93	26.63

* No carcass data was collected in May 2020 due to Covid 19 pandemic