Discovering performance and value in North Dakota Calves: 2024-2025 Dakota Feeder Calf Show Feedout

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The Dakota Feeder Calf Show is a feedout project where North Dakota cattle producers are identifying cattle with superior growth and carcass characteristics. For 2024-2025 feeding period, the average difference in profitability between consignments from the top five herds and the bottom five herds was $376.95 per head.

Summary

Dakota Feeder Calf Show feedout project provides North Dakota cattle producers with the actual value of their spring-born beef steer calves, comparisons among herds, and benchmark feeding and carcass performance measurements. Cattle consigned to the feedout project were delivered to the Carrington Research Extension Center Livestock Unit on Oct. 19, 2024. After a 242-day feeding period with 1.79 percent death loss, cattle averaged 1460.6 pounds (shrunk harvest weight). Feed required per pound of gain was 6.6 (dry-matter basis). Overall pen average daily gain was 3.43 pounds per head. Feed cost per pound of gain was $0.618 and total cost per pound of gain was $0.903. Profit ranged from $1,213.79 per head for pen-of-three cattle with superior growth and carcass traits to $836.84 per head. The variability between producer's herds continues to be substantial when discovering the feeding and carcass value of spring-born calves.

Introduction

Although cattle prices are trending upward, cow calf producers need to be competitive with increasing production costs and increasing returns. By determining calf value through a feedout program, cow-calf producers can identify profitable genetics under common feedlot management. Substantial 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. Price premiums are provided for cattle producing highly marbled carcasses. Knowing production and carcass performance can lead to profitable decisions for ranchers raising North Dakota born and fed calves.

This ongoing feedlot project provides cattle producers with an understanding of cattle feeding and variability of cattle raised in North Dakota.

Procedures

The Dakota Feeder Calf Show was developed for cattle producers willing to consign steer calves to a show and feedout project. The calves were received in groups of three or four on Oct. 19, 2024, at the Turtle Lake Weighing Station, Turtle Lake, N.D., for weighing, tagging, veterinary processing, and display. 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 112 of which 96 competed in the pen-of-three contest.

The calves then 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 then were sorted and placed on corn and distiller grains 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 reimplanted with Synovex-One on December 17, 2024.

An educational meeting was provided on February 5, 2025, where cattle owners could review calves, ponder performance, and discuss marketing options.

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The cattle were harvested on June 19, 2025 (110 head). The cattle were sold to Tyson Fresh Meats, Dakota City, Neb., on a grid basis, with premiums and discounts based on carcass quality. Carcass data were collected after harvest.

Ranking in the pen-of-three competition was based on the best overall score. The overall score was determined by adding the index values for feedlot average daily gain (25 percent of score), marbling score (25 percent of score) and profit (25 percent of score) and subtracting index value for calculated yield grade (25 percent of score). The Dakota Feeder Calf Show provided awards and recognition for the top-ranking pen of steers.

Results and Discussion

Cattle consigned to the Dakota Feeder Calf Show feedout project averaged 603.8 pounds upon delivery to the Carrington Research Extension Center Livestock Unit on Oct. 19, 2025. After an average 242-day feeding period, cattle averaged 1,460.6 pounds (at plant, shrunk weight). Two steers died during the feeding period.

Average daily feed intake per head was 30.7 pounds on an as-fed basis and 22.8 pounds on a dry-matter basis. Pounds of feed required per pound of gain were 8.94 on an as-fed basis and 6.64 pounds on a dry-matter basis.

The overall feed cost per pound of gain was $0.618. The overall yardage cost per pound of gain was $0.116. Bedding cost was $0.060 per pound of gain. The combined cost per pound of gain, including feed, yardage, veterinary, trucking and other expenses except interest, was $0.903.

Calves were priced by weight upon delivery to the feedlot. The pricing equation ($ per 100 pounds = (-0.172337256* initial calf weight, pounds) + 294.5797033) was determined by regression analysis on local livestock auction prices reported for the weeks before and after delivery.

Overall, the carcasses contained U.S. Department of Agriculture Quality Grades at 0.9 percent Prime, 77.3 percent Choice (including 26.4 percent Certified Angus Beef), 20.9 percent Select and 0.9 percent ungraded. The USDA Yield Grades were 0.9 percent YG1, 18.2 percent YG2, 46.3 percent YG3, 18.2 percent YG4, and 16.4 percent YG5.

Carcass value per 100 pounds (cwt) was calculated using the actual base carcass price plus premiums and discounts for each carcass. The grid price received for June 19, 2025, was $385.57 Choice YG3 base with premiums: Prime $25, CAB $6, YG1 $6.50 and YG2 $3, and discounts: Select minus $16, ungraded (dark cutter) minus $55, YG4 minus $10, YG4 minus $22 and carcasses heavier than 1100 pounds minus $15 or lighter than 650 pounds minus $20.

Results from the calves selected for the pen-of-three competition are listed in Table 1.

Overall, the pen-of-three calves averaged 448.2 days of age and 1,475.9 pounds per head at slaughter. The overall pen-of-three feedlot average daily gain was 3.60 pounds, while weight gain per day of age was 1.95 pounds. The overall pen-of-three marbling score was 517.8 (average choice, modest marbling).

Correlations between profit and average birth date, harvest weight, average daily gain, weight per day of age or marbling score are shown in Table 2. Average slaughter weight, average daily gain, average weight per day of age and marbling score had higher correlations to profitability than average birth date, or yield grade.

The top-profit pen-of-three calves with superior genetics returned $1,314.70 per head, while the bottom pen-of-three calves returned as of $749.17 per head. The profit of the five top-scoring pens of steers averaged $1,213.79 per head, while the profit of the bottom five scoring pens of steers averaged of $836.84 per head.

For the pen-of-three competition, average profit was $1,024.44 per head. The spread in profitability between the top and bottom five herds was $376.95 per head.

North Dakota calf value is improved with superior carcass and feedlot performance. Favorable average daily gains, weight per day of age, harvest weight and marbling score can be found in North Dakota beef herds. Exceptional profit per head was a result of exceptional market price improvement in 2025. Feedout projects continue to provide a source of information for cattle producers to learn about feedlot performance and individual animal differences, and discover cattle value.

Table 1. Feeding performance — 2024-2025 Dakota Feeder Calf Show Feedout

Pen of three	Best Three Score Total	Average Birth Date	Average Weight per Day of Age, lbs	Average Harvest Weight, lbs.	Average Daily Gain, lbs.	Average Marbling Score[1]	Ave Calculated Yield Grade	Ave Feeding Profit or Loss/Head
1	2.1943	8-Mar-24	1.89	1518	3.65	584	3.32	$1,165.73
2	2.1311	26-Feb-24	2.13	1708	4.19	550	4.32	$1,314.70
3	2.0175	7-Mar-24	1.97	1522	3.82	597	4.47	$1,226.69
4	2.0081	15-Mar-24	2.14	1557	4.07	515	4.19	$1,244.04
5	1.9885	5-Mar-24	2.06	1619	4.00	515	3.84	$1,117.81
Average Top 5 herds	**2.07**	**6-Mar-24**	**2.04**	**1584.7**	**3.95**	**552.3**	**4.03**	**$1,213.79**
6	1.9692	19-Apr-24	2.04	1421	3.59	551	3.51	$1,037.31
7	1.9209	28-Mar-24	2.20	1596	4.06	626	5.20	$1,174.42
8	1.9157	30-Mar-24	1.92	1490	3.52	516	3.42	$1,056.76
	1.9072	23-Mar-24	2.13	1622	3.97	574	4.83	$1,200.69
	1.8983	10-May-24	2.11	1390	3.51	438	2.64	$979.57
	1.8675	16-Mar-24	1.83	1401	3.47	553	3.79	$1,031.78
	1.8624	13-Mar-24	1.62	1355	3.08	573	3.32	$954.85
	1.8453	5-Apr-24	1.99	1485	3.60	487	3.43	$1,008.06
	1.8225	11-Mar-24	1.82	1499	3.49	549	3.68	$935.09
9	1.7768	16-Apr-24	1.96	1418	3.43	556	3.97	$981.56
10	1.7605	17-Mar-24	1.73	1425	3.26	492	3.35	$982.85
11	1.7281	28-Mar-24	2.06	1553	3.81	539	5.06	$1,101.95
12	1.6975	8-Apr-24	1.98	1534	3.56	428	3.46	$995.00
13	1.6510	5-Apr-24	2.07	1495	3.76	517	4.70	$1,043.02
14	1.6108	10-Mar-24	1.77	1439	3.40	442	3.39	$875.02
15	1.6022	9-Apr-24	2.24	1595	4.01	606	5.82	$1,021.22
16	1.5834	24-Apr-24	1.90	1335	3.30	521	4.01	$873.73
17	1.5406	23-Apr-24	1.86	1358	3.24	469	3.74	$886.03
18	1.5142	3-May-24	1.87	1275	3.17	402	2.86	$749.17
19	1.2026	3-Mar-24	1.54	1289	2.99	346	3.17	$654.05
Average bottom 5 herds	**1.49**	**12-Apr-24**	**1.88**	**1370**	**3.34**	**469**	**3.92**	**$836.84**
Overall average - pens of three	**1.80**	**28-Mar-24**	**1.95**	**1,475.93**	**3.60**	**517.89**	**3.90**	**$1,024.44**
Standard deviation		20.4	0.2	110.4	0.3	67.7	0.8	152.7
number		25	25	25	25	25	25	25

[1]Marbling score 300-399 = select, 400-499 = low choice, 500-599 = average choice, 600-699 = high choice, 700-799 = low prime

Table 2. Correlations between profit and various production measures (pen of three).

	Correlation coefficient
Profit and average birth date	-0.3646
Profit and average slaughter weight	0.8480
Profit and average daily gain	0.8654
Profit and weight per day of age	0.6769
Profit and marbling score	0.7039
Profit and yield grade	0.5132