

## Dakota Feeder Calf Show 2018-2019 - Discovering Value in North Dakota Calves

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Superior growth and carcass characteristics of North Dakota calves are identified with producers participating in the Dakota Feeder Calf Show. The difference in profitability between consignments from the top five herds and the bottom five herds was \$169.47 per head for the 2018-2019 feeding period.

The Dakota Feeder Calf Show was developed for cattle producers willing to consign steer calves to a show and feedout project. By determining calf value in a feedout program, cow-calf producers can identify superior genetics when fed with common feedlot management.

The calves were received in groups of three or four on Oct. 20, 2018, 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 129, of which 110 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-Plus.

An open house was held on Feb. 1, 2019, at the Carrington Research Extension Center Livestock Unit, where the owners reviewed the calves and discussed marketing conditions.

The cattle were harvested on May 22, 2019 (125 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.

Cattle consigned to the Dakota Feeder Calf Show feedout project averaged 604.88 pounds upon delivery to the Carrington Research Extension Center Livestock Unit on Oct. 20, 2018. After an average 212-day feeding period, cattle averaged 1,325.4 pounds (at plant, shrunk weight). Death loss was 2.33 percent (three head) during the feeding period.

Average daily feed intake per head was 36.2 pounds on an as-fed basis and 23.9 pounds on a dry-matter basis. Pounds of feed required per pound of gain were 11.1 on an as-fed basis and 7.35 pounds on a dry-matter basis.

The overall feed cost per pound of gain was \$0.487. The overall yardage cost per pound of gain was \$0.106. The combined cost per pound of gain, including feed, yardage, veterinary, trucking and other expenses except interest, was \$0.746.

Calves were priced by weight upon delivery to the feedlot. The pricing equation (\$ per 100 pounds = (-0.058517799\* initial calf weight, pounds) + 198.6623157) 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 2.4 percent Prime, 67.2 percent Choice (including 13.6 percent Certified Angus Beef), 28.0 percent Select, 0.8 percent

Standard and 1.6 percent other, and USDA Yield Grades at 9.6 percent YG1, 44.0 percent YG2, 41.6 percent YG3, 4.8 percent YG4 and 0 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 May 22, 2019, was \$189.05 Choice YG3 base with premiums: Prime \$15, CAB \$6, YG1 \$6.50 and YG2 \$3, and discounts: Select minus \$13, Standard (no roll) minus \$15, YG4 minus \$6, and defect carcasses (blood splash or dark cutter) minus \$55.

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

Overall, the pen-of-three calves averaged 409 days of age and 1,333.3 pounds per head at harvest. The overall pen-of-three feedlot average daily gain was 3.42 pounds, while weight gain per day of age was 3.27 pounds. The overall pen-of-three marbling score was 459.3 (low choice, small marbling).

The top-profit pen-of-three calves with superior genetics returned \$167.46 per head, while the bottom pen-of-three calves returned \$-199.23 per head. The average of the five top-scoring pens of steers averaged \$142.46 per head, while the average of the bottom five scoring pens of steers averaged \$-27.01 per head.

For the pen-of-three competition, average profit was \$69.45 per head. The spread in profitability between the top and bottom five herds was \$169.47 per head.

Calf value is improved with superior carcass and feedlot performance. Exceptional average daily gains, weight per day of age, harvest weight and marbling score can be found in 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.

**Table 1. Feeding performance - 2018-2019 Dakota Feeder Calf Show Feedout.**

	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
	21-Apr-18	3.347	1323.6	3.663	514.3	2.522	\$ 137.82
	7-Apr-18	3.520	1436.0	3.784	539.7	3.192	\$ 165.46
	31-Mar-18	3.337	1385.8	3.564	606.0	3.443	\$ 139.21
	25-Mar-18	3.210	1354.7	3.645	458.0	2.648	\$ 139.98
	15-Mar-18	3.400	1465.5	3.954	475.7	3.108	\$ 129.82
<b>Average Top 5 herds</b>	1-Apr-18	3.363	1393.106	3.722	518.733	2.983	\$ 142.46
	19-Apr-18	3.546	1406.5	3.622	422.0	2.380	\$ 107.27
	4-Mar-18	3.141	1391.4	3.645	486.7	3.068	\$ 142.02
	6-Apr-18	3.374	1379.4	3.730	452.0	2.959	\$ 148.65
	16-Apr-18	3.297	1316.4	3.418	524.0	2.978	\$ 101.59
	25-Apr-18	3.567	1391.4	3.856	491.7	3.534	\$ 158.64
	7-Apr-18	3.269	1334.0	3.125	549.3	3.019	\$ 105.44
	27-Mar-18	3.348	1404.9	3.575	531.7	3.763	\$ 166.13
	26-Mar-18	3.328	1400.1	3.475	493.3	3.429	\$ 153.29
	2-Mar-18	3.147	1392.9	3.558	480.0	3.593	\$ 110.73
	13-Apr-18	3.469	1396.1	3.550	437.7	3.179	\$ 86.15
	21-Mar-18	3.080	1307.7	3.432	536.0	3.872	\$ 102.41
	6-Apr-18	3.489	1425.6	3.634	378.0	2.796	\$ 59.42
	6-Apr-18	3.102	1271.8	3.296	387.3	2.095	\$ (24.77)
	21-Apr-18	3.310	1303.7	3.116	592.3	3.986	\$ 81.53
	8-Apr-18	2.735	1115.6	3.031	358.3	1.943	\$ 15.12
	16-Mar-18	3.052	1313.3	3.176	444.7	2.766	\$ 10.53
	25-Mar-18	3.277	1379.4	3.479	404.7	3.153	\$ 63.55
	27-Apr-18	3.289	1279.8	3.074	507.3	3.432	\$ 44.06
	8-Apr-18	3.097	1261.5	2.965	476.3	2.949	\$ 10.29
	6-Jun-18	3.362	1173.0	3.128	332.7	2.019	\$ (29.75)
	17-Apr-18	3.508	1398.5	3.373	413.0	2.794	\$ (36.46)
	24-Apr-18	3.480	1361.9	3.600	381.7	2.799	\$ (48.32)
	30-Apr-18	3.182	1227.2	3.242	473.0	3.795	\$ 52.69
	20-Mar-18	2.899	1236.0	3.103	337.7	2.745	\$ (21.97)
	20-Apr-18	3.028	1197.4	3.079	360.0	2.262	\$ (199.23)
	1-Apr-18	3.150	1304.1	3.188	393.5	3.489	\$ 81.78
<b>Average bottom 5 herds</b>	13-Apr-18	3.148	1265.3	3.242	389.2	3.018	\$ (27.01)
Overall average - pens of three	7-Apr-18	3.269	1333.4	3.422	459.3	3.023	69.45
Standard deviation	18.9	0.2	82.8	0.3	72.8	0.5	82.8
number	31	31	31	31	31	31	31

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