

**Feedlot Breed Comparison of First Generation Steers:
Hereford, Angus X Hereford, Milking Shorthorn X Angus
X Hereford, and Simmental X Hereford**

By

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A very large percentage of beef cattle producers in this country are switching to more crossbreeding in an attempt to show a profit in their beef cattle enterprise. Which crossbred type to use is not a very easy decision to make, and is generally made based on what type and breed combination is selling well at the time. Since the generation interval in cattle is long and the margin between profit and loss is often small, producers are often trapped into producing a terminal cross calf instead of developing a high producing brood cow first.

Research comparing efficiencies of cows is just beginning to filter out of research facilities in this country and Canada. In keeping with current research needs, an investigation to evaluate biologically different breed types in a cow efficiency study is underway at this station to give stockmen an opportunity to use data that has been collected closer to home.

In this breeding model, crossbred brood cow types that are biologically diverse are being developed that will maximize heterosis when outcrossed to unrelated terminal Sire breeds. Brood cow development for the efficiency study results in the production of steer calf counterparts. This phase of the investigation is designed to evaluate feedlot performance and carcass results from steers produced during the first generation of breeding. Generation one breeding is shown in Table 1.

Steers used represented each breed combination and were started on feed when average weights ranged between 600 and 675 pounds. Seven steers were allotted to each treatment, implanted with Compudose[®], treated for lice with Lysoff[®] and booster vaccinated with a 7-way Clostridium vaccine.

The steers were bunkline fed a complete mixed ration that began at 30% barley and increased to 75% barley, in regular 5% increases, where they remained for the duration of the study.

The steers were fed on a grade constant basis meaning that each group was fed until it was felt that 60% of the animals would meet a choice grade goal.

Slaughter was done at Held Beef, West Fargo, North Dakota, and carcass evaluation was done by Dr. Paul Berg, NDSU Animal Science Department.

Feeding gains, economics and carcass data and returns over feed are shown in Table 2.

Summary:

The steers in this feeding study were fed on a grade constant basis. Our goal was 60% choice, but we were unable to attain that goal with any of the breed groups. Since each group was fed to a grade constant basis, the groups of steers were sent to slaughter at Held Beef in West Fargo when it was felt that the group was ready. The Angus X Hereford (AxH) and Milking Shorthorn X Angus X Hereford steers were sent to slaughter together on July 17th. The Hereford (H) and Simmental X Hereford (SxH) steers were not ready and remained on feed. Although they still didn't appear to be ready visually after an additional 21 days on feed, they began backing off on feed and had to be slaughtered short of our goal.

The (AxH) steers demonstrated the most successful performance through feeding and marketing of their carcasses. Daily gains for each of the groups were 2.41, 2.69, 2.88, and 2.45 pounds per day for the (H), (AxH), (MSxAxH) and (SxH) steers respectively.

Carcass quality based on USDA quality grade varied substantially. The percentage of steers reaching the choice grade in each group were 29%, 29%, 43% and 57% for the (H), (SxH), and (AxH) and (MSxAxH) respectively.

Feed efficiency as reflected by the cost per hundredweight of gain ranged from a high of \$41.70 among the (SxH) steers to a low of \$35.72 for the (H) steers. Feed costs for the other breed groups fell between these two extremes. Cost per hundredweight of gain for the (AxH) steers was \$35.88, and the (MSxAxH) group cost \$37.04/cwt to feed.

The infusion of Angus and Milking Shorthorn breeding improved carcass quality and overall net returns for the (AxH) and (MSxAxH) breed groups. Angus X Hereford steers returned the most dollars over feed cost at \$452.52 and were followed closely by the (MSxAxH) group at \$440.57.

Feeding of generation one steers will be continued two more years.

Table 1. Generation I Breeding Scheme

Foundation Cows	X	Sire Breed	Generation I Progeny
Hereford	X	Hereford Angus Simmental	Hereford Angus X Hereford Simmental X Hereford
Angus X Hereford	X	Milking Shorthorn	Milking Shorthorn X Angus X Hereford

Table 2. Feedlot Gains, Economics and Carcass Data for First Generation Steers

	Hereford	Angus X Hereford	M. Shorthorn Angus X Hereford	Simmental X Hereford
Gains:				
No. Head	7	7	7	7
Days Fed	195	174	174	195
Initial Wt., lbs.	598.4	644	646.2	675.4
Final Wt., lbs.	1069.3	1112.1	1148.6	1153.6
Gain, lbs.	470.9	468.1	502.4	478.2
ADG, lbs.	2.41	2.69	2.88	2.45
Economics:				
Feed/Head, lbs.	3987.7	3985.4	4411.3	4729.7
Feed/Head Daily, lbs.	20.45	22.90	25.35	24.25
Feed/Lb. of Gain, lbs.	8.48	8.51	8.08	9.90
Feed Cost/Head, \$	168.20	167.97	186.07	199.41
Cost/Cwt. of Gain, \$	35.72	35.88	37.04	41.70
Carcass Data:				
USDA – Grade	2 Choice 5 Good <u>2</u> /	3 Choice 4 Good <u>1</u> /	4 Choice 3 Good <u>1</u> /	2 Choice 5 Good <u>2</u> /
Hot Weight, lbs.	613.4	651	648.9	663.4
Carcass Value, \$	562.62	620.49	626.64	608.92
Return Over Feed, \$	394.42	452.52	440.57	409.51

1/ Choice Carcass Value \$101.00/cwt; Good Carcass \$91.00/cwt.

2/ Choice Carcass Value \$ 96.00/cwt; Good Carcass \$90.00/cwt.