

PRODUCTION OF LEAN OR ECONOMY BEEF

D.G. Landblom and J.L. Nelson

Emphasis by consumers in this country is towards leaner beef. Consumer demand in this direction is evidenced by the significant increase in beef consumption through the fast food trade. Lean ground beef and economy steak consumption utilize approximately one-half of all beef produced.

Inflation continues to erode both the consumer's and beef producer's dollar, leaving each of them with less real buying power. The consumer is being forced to shop for economical meat and the producer must produce economical beef if he is going to survive.

Cow beef supplies a portion of the lean beef used in making hamburger, and the remainder is supplied by other classes of cattle. Which cattle class is the most profitable to produce has not been fully answered. Young bulls, dairy steers, and exotic crossbreds are a logical choice since they grow rapidly, have been shown to be efficient converters of feed to beef, and have a high lean to fat ratio.

The purpose of this trial is to evaluate feed efficiency, carcass type, quality and overall economics of rapid gaining "exotic" crossbred steers and conventional "British" bred crossbred bulls fed for the production of lean beef.

In 1978, a pilot trial compared Simmental crossbred steers and Angus X Hereford bulls as a source of lean beef. The trial was expanded, and in 1979 and 1980, Charolais crossbred steers were included in the comparison.

All calves were vaccinated for blackleg, malignant edema, hemorrhagic septicemia and enterotexemia types C + D. The steers were implanted with 36 mg. of Ralgro at the start of the trial and were re-implanted after being on feed 100 days.

Rations fed in the expanded trial in 1979 and 1980 were formulated with the assistance of the AGNET Computer and are shown in detail in Table 1.

Feeding results and economic analysis are shown in Table 2.

Summary:

Crossbred "exotic steers" and "British" bulls gained rapidly, were efficient and produced high quality lean beef that possesses a minimum fat cover.

The Simmental cross steers and crossbred bulls reached projected quality grades of average to high good in an average 191 days, while Charolais cross steers required more time on feed in 1980, resulting in an average feeding period of 205 days. Daily gains averaged 2.6, 2.4 and 2.8 pounds per head for the crossbred bulls, Charolais and Simmental cross steers, respectively.

No difference in feed efficiency was measured in 1980. However, the two year average favored the Simmental cross steers by 0.5 pound per pound of gain, which amounted to a \$2.00 reduction in feed costs per hundred weight of gain when compared to the bulls.

Quality grades ranged from Choice to Stag. Crossbred bull carcasses were evenly split between USDA Good and Standard, with none grading "Stags". However, in 1979 two of the Charolais cross steers were graded as Stags, which was unexpected, because the animals didn't express any visible staggy features. Highest quality grades were measured among the Charolais steers in which 75% graded Good or Low Choice. Simmental cross steers had the heaviest carcasses, averaging 679 pounds, and graded 66.6% Good and 33.3% Standard.

Profitability among these three treatments when fed to average – high Good quality grades was up and down. Feeding in 1979 was profitable for all types; however, 1980's performance results were offset when the trail was analyzed economically. High feeder calf costs coupled with a significantly depressed fat cattle market at the time these cattle had reached their predetermined end point resulted in substantial net losses.

Table 1. AGNET Rations Fed in Hamburger Beef Study

	Warm-up	Ration Changes			
		1 st	2 nd	3 rd	4 th
1979:					
No. days fed	11	8	93	14	47
Oats, %	30	40	50	50	50
Barley, %	--	5	5	20	20
Mixed Tame Hay, %	67.5	25	15	15	19.3
Straw, %	--	29.5	29.5	14.3	--
Dicalcium Phosphate, %	.5	--	--	--	--
Limestone, %	--	.2	.2	.4	.4
Salt, %	2	.3	.3	.3	.3
1980:					
No. days fed	27	76	22	19	92
Oats, %	30	25.1	25.1	25.1	25
Barley, %	--	31.2	41.2	41.2	50
Mixed Tame Hay, %	67.5	--	--	20.7	24.2
Alfalfa, %	--	20.7	20.7	--	--
Straw, %	--	22.4	12.4	12.4	--
Dicalcium Phosphate, %	.5	.2	.2	.2	.2
Limestone, %	--	.1	.1	.1	.3
Salt, %	2	.3	.3	.3	.3

Table 2. Weights, Gains, Feed Summary, Carcass Data and Partial Economic Analysis for Crossbred Cattle Fed to High Good and Low Choice Grades

	Steers					
	Beef Bulls		Charolais X		Simmental X	
	1980	2 – Yr Avg.	1980	2 – Yr Avg.	1980	2 – Yr Avg.
No. head	6	12	6	12	6	12
Days on feed	208	191	236	205	208	191
Initial wt, lbs.	575	598	505	534	693	680
Final wt, lbs.	1120	1109	1048	1033	1255	1215
Gain, lbs.	545	511	543	499	562	535
ADG, lbs.	2.62	2.67	2.3	2.4	2.70	2.80
Feed Summary:						
Feed/hd, lbs.	5373	4875	5373	4607	5547	4807
Feed/hd/day, lbs.	25.8	25.5	22.8	22.5	26.7	25.2
Feed/lb. of gain	9.9	9.5	9.9	9.4	9.9	8.9
Feed cost/hd, \$	214.63	176.88	216.46	169.62	220.54	174.74
Feed cost/cwt of gain, \$	39.38	34.61	39.86	33.99	39.24	32.66
Carcass Summary:						
Hot carcass wt, lbs.	643	625	616	592	712	679
USDA Grade – Choice	--	--	3	4	--	--
Good	2	6	1	5	6	8
Standard	4	6	--	1	--	4
Stag	--	--	2	2	--	--
Dressing, %	57.4	56.2	58.7	56.8	56.7	55.4
Loin eye area, sq. in.	12.1	12.2	12.9	12.6	12.4	13.0
Fat thickness, in.	.39	.29	.26	.20	.28	.20
Carcass value, \$	621.50	606.14	626.62	591.70	711.66	658.79
Partial Economic Analysis:						
Feed cost/hd, \$	214.63	176.88	216.46	169.62	220.54	174.74
Implant cost, \$	--	--	1.20	1.20	1.20	1.20
Feeder calf cost, \$	517.50	469.55	480.00	431.42	555.74	504.31
Gross return, \$	621.50	606.14	626.62	591.70	711.66	658.79
Net return, \$	-110.63	-40.29	-71.04	-10.54	-65.82	-21.46