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V. L. Anderson
South Dakota State University

C. A. Dinkel

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FORAGE FINISHING EXOTIC CROSSBRED AND BRITISH CATTLE

V.L. Anderson and C.A. Dinkel

Dept. of Animal Science
Experiment Station

South Dakota State University
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Summary

Exotic crossbred cattle finished on an all-forage ration gained slower and less efficiently than concentrate-fed half sibs. Dressing percentage was lower for forage-finished cattle. Carcass quality and yield grades were similar for both rations. Feed cost per pound of gain was lower for forage-finished cattle. British cattle finished on forage were less efficient than exotic crossbred cattle on the same ration. Carcasses from forage-finished British cattle graded higher with a less desirable yield grade than the exotic crossbred cattle on the same ration.

Introduction

The success of forage-finishing cattle depends on the differences in price and availability of grain and forage. Since there is limited information available on finishing exotic crossbred cattle on all-forage rations, a 2-year project was conducted to study the differences in feedlot performance and carcasses from forage- and concentrate-fed animals.

Procedures

The exotic crossbred cattle used in this experiment were produced at the South Dakota State University Beef Breeding Unit by mating Angus, Charolais, Angus x Charolais and Charolais x Angus dams artificially to one Limousin sire in 1976 and one Simmental sire in 1977. The straightbred British cattle used, primarily Hereford and Angus with a few Shorthorns, were produced at the SDSU Beef Unit. The British cattle were subjected to some selection prior to the start of the trial.

The forage ration consisting of three parts by weight (as fed) corn silage (38% dry matter) and one part alfalfa hay (18.1% protein) was pen fed ad libitum in sex groups. The concentrate rations were fed individually ad libitum and consisted of the following ingredients by weight as fed:

<u>Growing Ration</u>	<u>Finishing Ration</u>
58% cracked corn	83% cracked corn
20% ground alfalfa	10% ground alfalfa
16% oats	5% soybean meal
4% soybean meal	2% vitamin A premix
2% vitamin A premix	

Steers and heifers were switched from a growing to a finishing ration at 700 pounds and 625 pounds and fed for an additional 140 days and 119 days, respectively, prior to slaughter.

An attempt was made to slaughter the forage-fed exotic crossbred cattle at the same weight as the corresponding concentrate-fed cattle. Target weights for British steers and heifers were 1000 pounds and 825 pounds, respectively. USDA graders evaluated the carcasses.

Results

Treatment groups are compared for feedlot performance and carcass data in tables 1 and 2. Exotic crossbred steers and heifers fed the concentrate rations gained .54 pound and .63 pound more per day, respectively, than forage-fed half sibs. TDN requirements were 2.64 pounds and 1.97 pounds less per pound of gain for concentrate-fed exotic crossbred steers and heifers, respectively, than for similar cattle on the forage ration. Feed costs per pound of gain for concentrate-fed exotic crossbred steers and heifers were \$.267 and \$.269, respectively (table 1). Feed costs for forage-fed exotic crossbred steers and heifers were \$.248 and \$.243, respectively. Dressing percentages were 6.8% and 5.6% better for concentrate-fed steers and heifers, respectively. Carcass quality and yield grades were similar for all exotic crossbred cattle on both rations.

Forage-fed exotic crossbred steers and heifers gained .54 pound and .18 pound more per day, respectively, than British cattle. British steers and heifers required 1.63 pounds and .56 pound more TDN, respectively, per pound of gain than exotic crossbred cattle. Feed costs per pound of gain for forage-fed steers and heifers were \$.353 and \$.243 for British and \$.248 and \$.243 for exotic crossbreds, respectively. Dressing percentages were .3% and .9% better for exotic crossbred steers and heifers, respectively, than British cattle on the same all-forage ration. Yield grades for exotic crossbred steer and heifer carcasses were .9 and .7, respectively, more desirable than grades for British cattle. Carcass quality grade was one grade higher for British steers and heifers than exotic crossbred cattle.

This trial indicates concentrate rations are advantageous for rate of gain and dressing percentage but forage rations may result in lower feed cost per pound of gain. Forage-fed cattle require a longer time on feed and increased fixed costs may offset the lower feed cost per pound of gain advantage.

Table 1. Feedlot Performance of British and Exotic Crossbred Cattle

	<u>British straightbred Forage</u>	<u>Exotic crossbred Forage</u>	<u>Exotic crossbred Concentrate</u>
<u>Steers</u>			
No. of animals	18	19	65
Starting wt., lb	446	546	540
Final wt., lb	943	1065	1083
Average daily gain, lb	1.40	1.94	2.48
TDN/gain	9.52	7.89	5.25
Feed cost of gain, \$ per lb	.222 ^a	.204 ^a	.251 ^b
<u>Heifers</u>			
No. of animals	19	32	66
Starting wt., lb	423	525	516
Final wt., lb	779	915	898
Average daily gain, lb	1.57	1.75	2.38
TDN/gain	8.03	7.47	5.50
Feed cost of gain, \$ per lb	.219 ^a	.202 ^a	.260 ^b

^a Based on feed prices of \$15 per ton for corn silage and \$25 per ton for alfalfa hay.

^b Based on feed prices of \$2 per bushel for corn, \$30 per ton for alfalfa hay, \$1 per bushel for oats, \$200 per ton for soybean meal and \$7.50 per hundredweight for vitamin A premix.

Table 2. Carcass Data from British and Exotic Crossbred Cattle

	<u>British straightbred Forage</u>	<u>Exotic crossbred Forage</u>	<u>Exotic crossbred Concentrate</u>
<u>Steers</u>			
Dressing percentage	57.1	57.4	64.2
USDA yield grade ^a	2.2	1.3	1.3
USDA quality grade ^b	C-	G-	G
<u>Heifers</u>			
Dressing percentage	57.5	58.4	64.0
USDA yield grade	2.0	1.3	1.2
USDA quality grade	C-	G-	G-

^a Yield grade 1 = 52.4 - 54.6% cutability. Yield grade 2 = 50.1 - 52.3% cutability.

^b C- = low choice, G = average good, G- = low good.