

1982

Effect of Length of Feeding Period of Performance of British and Exotic Crossbred Yearling Heifers

D. L. Whittington
South Dakota State University

L. B. Bruce

A. Dittman

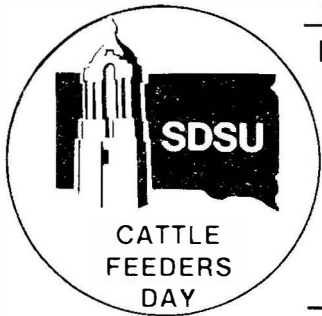
M. Esser

Follow this and additional works at: http://openprairie.sdstate.edu/sd_cattlefeed_1982

Recommended Citation

Whittington, D. L.; Bruce, L. B.; Dittman, A.; and Esser, M., "Effect of Length of Feeding Period of Performance of British and Exotic Crossbred Yearling Heifers" (1982). *South Dakota Cattle Feeders Field Day Proceedings and Research Reports, 1982*. Paper 4.
http://openprairie.sdstate.edu/sd_cattlefeed_1982/4

This Report is brought to you for free and open access by the Animal Science Reports at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in South Dakota Cattle Feeders Field Day Proceedings and Research Reports, 1982 by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.



EFFECT OF LENGTH OF FEEDING PERIOD OF PERFORMANCE¹ OF BRITISH AND EXOTIC CROSSBRED YEARLING HEIFERS

D. L. Whittington, L. B. Bruce,
A. Dittman And M. Esser

DEPT. OF ANIMAL SCIENCE REPORT
CATTLE 82-3

Summary

Seventy-two heifers were fed for 98, 112 and 126 days to determine the optimum feeding period for Charolais-cross and black baldy heifers. Average daily gains and feed conversions of the heifers were similar among treatments. Carcass weight, quality grade and yield grade increased with time on feed. Fat thickness, quality grade and yield grade increased faster for the black baldy heifers. Cost per pound of gain was similar for all treatments.

The optimum weight at which to slaughter the black baldy yearling heifers appeared to be between 925 and 975 lb, both from a quality and economic viewpoint. The optimum weight for slaughtering the Charolais-cross heifers was apparently about 1050 lb as gains had declined in kill group 3.

The limited research conducted in this study indicates that a producer feeding mixed lots of cattle needs to be aware of the weight at which different types of cattle reach optimum condition. The feeder has greater flexibility in marketing the larger framed, exotic-cross type cattle as compared to the relatively smaller framed English breeds.

Introduction

Producers very often question the additional length of time they should feed exotic-cross cattle as opposed to the feeding period required for the traditional British breeds of cattle. Also implied in this question is the additional amount of feed needed for the exotic-cross animal to attain an optimum weight and an acceptable grade. This trial was conducted in an attempt to help answer these basic questions.

Procedure

Thirty-six large-framed, Charolais-cross heifers averaging 688 lb were allotted by weight to three pens. Thirty-six medium-framed, Angus x Hereford crossbred heifers averaging 582 lb were allotted by weight to the remaining three pens. One pen each of Charolais-cross and black baldy heifers were fed for 98, 112 and 126 days. On each of the three slaughter dates, the assigned cattle were shrunk over night, weighed the following day, trucked to a commercial packing house and sold on a grade and yield basis. Carcass data were collected in the plant.

All of the heifers were fed the same ration consisting of 1 lb of a 55-25% urea based supplement and the balance of the ration being 10% ground hay and 90% whole shelled corn. Heifers were started out on a high roughage

ration and gradually brought up to a full feed of the above ration. Sufficient ration was offered daily so that heifers were never without feed. Ample quantities of fresh clean water and trace mineralized salt were available at all times.

The economic comparison was made using the following values: feed = \$3.20/cwt and carcass prices; choice grade 615 lb and up = \$.96/lb, choice 565-614 lb = \$.94 lb, choice 515-564 lb = \$.91 lb, good 615 lb and up = \$.94/lb and good 515-614 lb = \$.92/lb. No values were assigned for purchasing and marketing costs, labor or yardage fees.

Results

The results of this study are summarized in table 1. Average daily gains were similar for the Charolais-cross and black baldy heifers in each slaughter group. Feed conversion ranged from 7.6 to 8.5 lb of feed per pound of gain. The feed conversions were very similar for the exotic-cross and black baldy groups killed on the same day.

Differences in carcass weights (652.8 vs. 553.7) were greatest between the Charolais-cross and the black baldy heifers killed in the 112-day slaughter group, which may have been more a function of the differences in average daily gains of these groups as compared to slaughter groups 1 and 3. The dressing percent among the heifers killed in group 3 was greatest (61.7 vs. 60.7). The Charolais-cross cattle in the other kill groups had heavier carcasses and somewhat higher dressing percents. The difference in average fat thickness was greater in the first kill group and came closer together as cattle were fed longer.

Quality grade was also greater among heifers killed in the first group. As heifers were on feed longer, quality grades came closer. However, the spread in yield grade stayed rather constant at about .6 to .7 of a grade. The average yield grades of the Charolais-cross cattle did not exceed 2.0, indicating that these heifers could have been fed longer to attain a higher degree of finish without jeopardizing yield. However, the rate of gain had declined, indicating the cost per pound of gain was going up for the last 14 days in group 3. The black baldy in group 3 averaged 2.7 yield grade, indicating that their weight and age were somewhat optimum for attaining a desirable grade and yield. The feeder should keep in mind that these black baldy heifers were long yearlings. Black baldies started on high concentrates at a younger age may not reach these weights without a number of yield grade 4's.

As can be seen from table 1, carcass value increased with weight and grade. Cost per pound of gain was similar for all groups.

¹Trial conducted at the James Valley Research Farm, Redfield, S.D.

TABLE 1. COMPARISON OF CHAROLAIS-CROSS AND BLACK BALDY HEIFERS
FED 98, 112 AND 126 DAYS

Slaughter group Breed cross	1		2		3	
	Exotic	British	Exotic	British	Exotic	British
No. days on feed	98	98	112	112	126	126
Avg initial wt, lb	694.8	585.6	688.6	578.5	681.8	581.3
Avg final wt, lb	995.3	875.9	1053.0	902.6	1059.6	954.2
Avg daily gain, lb	3.1	2.9	3.25	2.9	3.0	2.9
Avg daily ration, lb (as fed basis)						
Shelled corn	19.4	18.4	19.6	18.5	20.4	18.8
Ground hay	4.3	4.0	4.0	3.9	4.1	3.5
Supplement	1.0	1.0	1.0	1.0	1.0	1.0
Total	24.7	23.4	24.6	23.4	25.5	23.3
Lb feed/lb gain	7.9	8.1	7.6	8.1	8.5	8.0
Carcass characteristics						
Avg carcass wt, lb	609.7	533.0	652.8	553.7	654.3	579.2
Avg dressing percent, %	61.2	60.8	61.9	61.3	61.7	60.7
Avg fat thickness, in	.33	.45	.35	.45	.43	.46
Avg quality grade ¹	10.2	11.0	10.7	11.4	11.2	11.0
Avg yield grade	1.8	2.4	2.0	2.6	2.0	2.7
Economic comparison						
Avg carcass value, \$	560.92	485.03	620.16	503.8	628.12	544.44
Avg price per lb, \$.92	.91	.95	.91	.96	.94
Total feed cost, \$	77.45	73.38	88.16	83.86	102.81	93.94
Feed cost per lb gain, cents	.25	.26	.24	.26	.27	.26

¹10 = high good, 11 = low choice, 12 = average choice.