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

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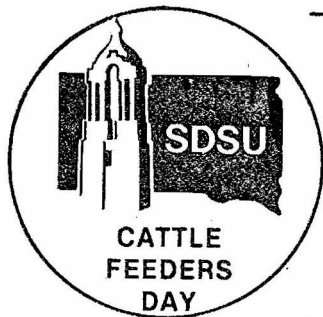
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EFFECT OF LENGTH OF FEEDING PERIOD ON PERFORMANCE OF  
BRITISH AND EXOTIC CROSSBRED YEARLING HEIFERS<sup>1</sup>

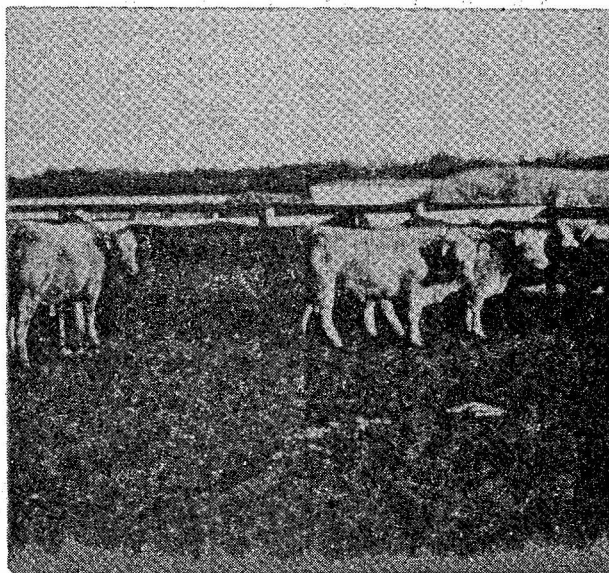
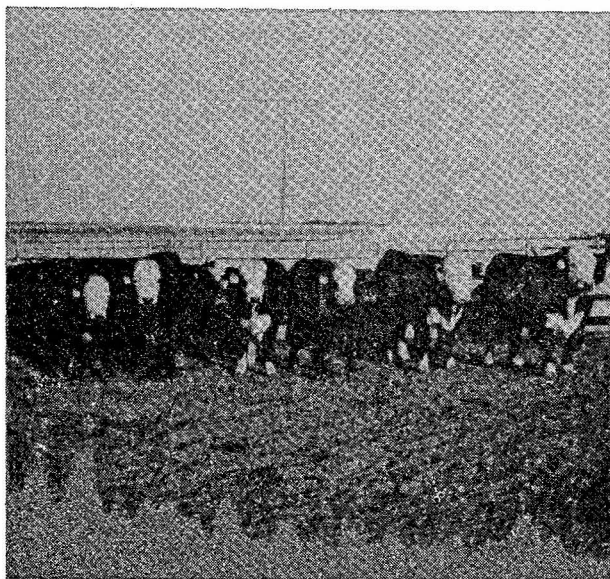
D. Whittington, G. Kuhl, A. Dittman and M. Esser  
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Summary

Seventy-two heifers were fed for 47, 61 and 75 days to determine the optimum feeding period for exotic 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 1000 and 1050 lb., both from a quality and economic view point. The optimum weight for slaughtering the exotic cross heifers was apparently not reached, as the last slaughter group was still gaining rapidly and efficiently with little increase in condition.



Large framed black baldies and exotic crosses  
were compared in this trial,

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<sup>1</sup> Trial conducted at James Valley Research and Extension Center,  
Redfield, South Dakota.

The limited research conducted in this study indicates that a producer with 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.

#### Procedure

The heifers used in the trial described in the preceding paper were allotted to six pens on the basis of shrunk body weight and previous treatment for a finishing period of 47, 61 or 75 days. Three pens were exotic cross cattle and three pens were black baldies. On each of the three slaughter dates one assigned pen each of exotic cross and black baldy heifers were taken 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 5 lb. of coarse ground barley, 1 lb. of the urea-based supplement described in the preceding experiment and a full feed of whole shelled corn. Heifers were gradually brought up to a full feed of this ration composed entirely of concentrates. The complete ration was carefully mixed and fed once daily. Sufficient ration was offered daily so that the heifers were never without feed. Ample quantities of fresh clean water and trace mineralized salt were available at all times.

Check weights were taken on all animals when a group went to slaughter to help monitor average daily gains. Only those animals being slaughtered were weighed again the next morning after an overnight stand without feed and water. This allowed us to calculate shrink which we could then apply to the other treatments and figure average daily gain on an estimated shrunk weight basis.

The economic comparison was made using the following values: feed = \$3.20 per cwt.; carcass prices, choice grade 615 lb. and up = \$1.02 per lb., choice 515 to 614 lb. = \$1.01 per lb, good 615 lb. and up = \$.96 per lb. and good 515 to 614 lb. = \$.94 per pound. 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 exotic cross and black baldy heifers in each slaughter group. The animals gained comparatively in all groups throughout the trial. The gains apparently had not peaked when the first group was slaughtered. Feed conversion ranged from 7.0 to 8.5 lb. of feed per pound of gain. The feed conversions were very similar for the exotic cross and black baldy groups slaughtered on the same day.

Differences in carcass weights (603.8 vs. 556.1) were greatest between the exotic cross and the black baldy heifers slaughtered in the 47-day slaughter group, which may have been more a function of the differences in initial weights of these groups as compared to slaughter groups two and three. The dressing percentage between these groups was also the greatest (61.8 vs. 60.1). The exotic cross cattle in the other slaughter groups had heavier carcasses, but the dressing percentages were almost identical at.

Table 1. Comparison of Exotic Cross and Black Baldy Heifers  
Fed for 47, 61 and 75 Days

Slaughter group Breed cross	1		2		3	
	Exotic	British	Exotic	British	Exotic	British
No. days on feed	47	47	61	61	75	75
Avg. initial wt., lb.	857.8	806.1	845.8	816.8	843.2	810.9
Avg. final wt., lb.	976.5	924.3	1019.9	1001.7	1055.1	1020.8
Avg. daily gain, lb.	2.53	2.51	2.85	3.03	2.83	2.79
Avg. daily ration, lb. (as fed basis)						
Shelled corn	15.9	14.2	15.4	15.5	16.2	15.3
Ground barley	4.7	4.7	4.8	4.8	4.9	4.9
Supplement	1.0	1.0	1.0	1.0	1.0	1.0
Total	21.6	19.0	21.2	2.13	22.1	21.2
Lb. feed/lb. gain	8.5	7.9	7.4	7.0	7.8	7.6
Carcass characteristics						
Avg. carcass wt., lb.	603.8	556.1	614.7	604.2	636.7	616.8
Avg. dressing percent	61.8	60.2	60.3	60.3	60.3	60.4
Avg. fat thickness, in.	.31	.31	.34	.45	.37	.53
No. grading choice	8	7	8	11	7	10
No. grading good	4	5	4	1	5	2
Avg. yield grade	2.1	2.2	1.9	2.4	2.2	2.9
Economic comparison						
Avg. carcass value, \$	595.74	545.44	614.70	606.71	633.52	622.97
Avg. price per lb., \$	.99	.98	1.00	1.00	1.00	1.01
Total feed cost, \$	32.59	30.24	41.61	41.96	53.50	51.34
Feed cost per lb. gain, cents	.27	.26	.24	.23	.25	.25

60.3%. The average fat thickness was the same (.31 inch) for the two groups which were slaughtered at 47 days. In the latter two slaughter groups the black baldy cattle were carrying a considerably higher degree of finish than the exotic cross heifers (.45 vs. .34 and .53 vs. .37 inch for the 61- and 75-day slaughter groups, respectively).

The number grading choice was about equal (8 vs. 7) for the exotic cross and the black baldy heifers in the first slaughter group. Thereafter, the black baldy heifers increased in the number grading choice and the exotic cross heifers remained the same. It appears that a longer feeding period would have been required to take the exotic cross heifers into a greater percentage of choice. The average yield grades of the exotic cross cattle did not exceed 2.2, indicating that these heifers could have been fed longer to attain a higher degree of finish without jeopardizing yield. However, the black baldy heifers in group three averaged a 2.9 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 and were exceptionally grown out. Black baldies started on high concentrates at a younger age may not reach these weights without a lot of yield grade 4's.

As can be seen in table 1, carcass value increased with weight and grade. Cost per pound of gain was similar for all groups with the black baldy heifers showing a slight advantage.