

Performance to Weaning of Three-Breed Cross Calves Sired by Red Poll And Shorthorn Bulls

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Story in Brief

Various two-breed cross heifers were mated to Red Poll and Shorthorn bulls to produce their first calf at two years of age. A total of 334 three-breed cross calves were weaned over a three-year period and performance to weaning were very similar for calves sired by Red Poll and Shorthorn bulls. Some calving assistance was required for 26.1 percent of the calves. Overall, the calves weighed 63.5 lb at birth and 413.5 lb at weaning and had an average conformation grade of low choice. Shorthorn sired calves had slightly higher conformation scores and condition scores at weaning than the Red Poll sired calves.

Introduction

Research has shown that well designed crossbreeding systems can substantially increase percent calf crop weaned and calf weaning weights through hybrid vigor and combining the desirable traits of two or more breeds. An extensive research program is currently underway at the Oklahoma Agricultural Experiment Station to compare lifetime productivity of various two-breed cross cows mated to bulls of a third breed. Primarily, bulls from relatively large breeds will be used to sire calves in this study. However, to avoid excessive calving difficulty, Red Poll and Shorthorn bulls were mated to the crossbred heifers to produce their first calf at two years of age. The purpose of this study was to compare the performance of three-breed cross calves to weaning age that were sired by Red Poll and Shorthorn bulls.

Experimental Procedure

Hereford, Angus, Simmental, Brown Swiss and Jersey bulls were mated to Angus and Hereford cows to produce two-breed cross heifers in the spring of 1973, 1974 and 1975. Red Poll and Shorthorn bulls were mated to these eight different two-breed cross heifer groups (Hereford x Angus, Angus x Hereford, Simmental x Angus, Simmental x Hereford, Brown Swiss x Angus, Brown Swiss x Hereford, Jersey x Angus and Jersey x Hereford) to produce their first calves as two-year olds in the spring of 1975, 1976 and 1977. A total of 341

Table 1. Performance to weaning of three-breed cross calves sired by Shorthorn and Red Poll bulls

Trait	Breed of Sire		Difference Shorthorn-Red Poll
	Shorthorn	Red Poll	
Number of calves	165	169	
Birthweight, lb	63	64	-1
Calving difficulty score ¹	1.8	2.0	-0.2
Percent calving difficulty ²	25.9	26.3	-0.4
Preweaning ADG, lb/day	1.72	1.69	0.03
205-day weaning weight, lb ³	415	412	3
Weaning conformation score ⁴	13.1	12.6	0.5*
Weaning condition score ⁵	5.4	5.0	0.4*

¹Calving difficulty: 1=no difficulty, 2=little difficulty, 3=moderate difficulty, 4=major difficulty and 5=caesarian.

²Percent calving difficulty is the percentage of births receiving a calving difficulty score of 3, 4 or 5.

³Weaning weights were adjusted for age of calf only as all cows were two-year olds. Steer and heifer weights were averaged.

⁴Conformation score equivalents: 12=low choice, 13=average choice and 14=high choice.

⁵Condition score equivalents: range from 1=very thin to 5=average to 9=very fat.

*Differences significant at the .05 probability level.

three-breed cross calves were born and 334 weaned over the three year period. Three bulls of each sire breed were used for these matings each year.

The calves were born in January, February and March of each year at the Lake Carl Blackwell Research Range. Each cow was closely observed during calving and a score was assigned by the herdsman to indicate the level of calving difficulty on a scale ranging from 1=no difficulty to 5=caesarian birth or abnormal presentation. Calves remained on native grass with their dams until they were weaned at an average age of 205 days. At weaning, each calf was weighed and given a conformation score and condition score by a panel of at least three persons.

Results and Discussion

Table 1 presents means for various traits to weaning for the three-breed cross calves produced by each sire breed. Even though Red Poll and Shorthorn bulls were used to sire the first calf of these heifers in order to minimize calving problems, some calving difficulty was still experienced. Of the 341 heifers producing a calf, 89 heifers or 26.1 percent had some calving difficulty and required assistance from the herdsman. Percent calving difficulty is the percentage of births receiving a score of 3, 4 or 5. A score of 2 represents only minor assistance and was usually administered for the convenience of the herdsman rather than actually being necessary. Birthweights were not very heavy and quite similar for the Red Poll and Shorthorn sired calves (64 *vs* 63 lb). Thus, there was essentially no difference in calving difficulty between the two sire breeds (26.3 *vs* 25.9 percent).

Growth performance to weaning was very similar for the calves from both sire breeds and the average 205-day weaning weight was 413.5 lb (unadjusted for age of dam and averaged over sexes). The only statistically significant differences between sire breeds were that the Shorthorn sired calves were .5 of a weaning conformation score and .4 of a condition score higher than the Red Poll sired calves. Thus, the Shorthorn sired calves appeared to have slightly more muscle as well as more fat at weaning.

Overall, the performance of three-breed cross calves sired by Red Poll and Shorthorn bulls were very similar, and the slight differences that were detected may simply reflect differences between particular bulls rather than real breed differences. Feedlot and carcass performance of the three-breed cross calves born in 1975 were reported in the 1977 Animal Science Research Report (Okla. Agr. Exp. Sta. Res. Report MP-101:80) and the performances were similar for both sire breeds.

Productivity of Two-Year Old Crossbred Cows Producing Three-Breed Cross Calves

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Story in Brief

Productivity was measured on 434 two-year old heifers of seven crossbred groups (Hereford x Angus, Simmental x Angus, Simmental x Hereford, Brown Swiss x Angus, Brown Swiss x Hereford, Jersey x Angus and Jersey x Hereford) mated to Red Poll and Shorthorn bulls. Percent calf crop weaned varied greatly among crossbred groups from Jersey cross and Brown Swiss x Angus cows averaging 88 percent to Simmental x Hereford cows at 53 percent. The heaviest calves at weaning were produced by Brown Swiss x Angus cows at 446 lb. Hereford x Angus cows weaned calves averaging 369 lb and the other crossbred dam groups were similar at 416 lb. Jersey cross and Brown Swiss x Angus cows were most productive in terms of pounds of calf weaned per cow exposed in the breeding herd by 102 lb (37 percent) above the Hereford x Angus crosses, followed by the Brown Swiss x Hereford and Simmental x Angus groups (30.5 lb or 11 percent above the Hereford x Angus crosses). Simmental x Hereford cows weaned 57 fewer lb of calf per heifer exposed (21