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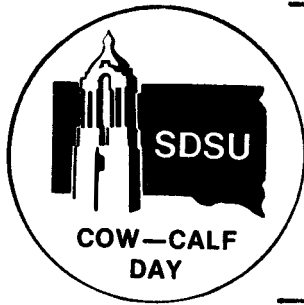
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## **Beef Production of Simmental-Angus and Hereford-Angus Crossbred Cows - A Progress Report -**

H. L. Miller, G. H. Deutscher, and F. W. Crandall

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### Summary

Comparison of Simmental-Angus (S x A) and Hereford-Angus (H x A) cows managed similarly under range conditions showed reproductive performance for S x A and H x A cows was similar through the first five calf crops. The S x A cows had a slight advantage in calves weaned over the H.x A cows (82.6 vs 82.0%). Little difference was observed in calving difficulty between the two breed groups. Considerably more milk was produced by the S x A cows. All aspects of calf performance were greater for calves from S x A cows (actual weaning weight, adjusted weaning weight and pounds of calf produced per cow). Average daily feedlot gain, carcass weight, dressing percent, rib eye area and fat thickness favored calves from S x A cows when compared to calves from H x A cows. The H x A cows produced calves that had a slightly higher percentage of carcasses grading choice than calves from S x A cows.

### Introduction

In recent years there has been increased utilization of exotic cattle to increase production in beef herds. Crossbreeding European breeds with domestic British breeds has resulted in larger calves at weaning and slaughter due to increased milking ability of the dams and gaining ability of the crossbred calves. Crossbreeding beef cows with European breeds has resulted in larger cows having higher nutrient requirements than the domestic breeds or crosses. Hereford-Angus crossbred cows have been used extensively in South Dakota and have performed well under local conditions.

This study was designed to compare reproductive performance and calf production of Simmental-Angus (S x A) and Hereford-Angus (H x A) crossbred cows under range conditions. Feedlot performance, carcass beef production and economics of calf production have also been evaluated.

### Procedures

One hundred eighty crossbred (S x A and H x A) heifer calves were purchased in 1974. In the spring of 1975, the yearling heifers were bred AI to one Angus bull. In subsequent years, the cows were bred AI to a Charolais bull in a terminal crossbreeding program. Semen from the same Charolais bull was used in 1976 and 1977 with a different Charolais bull being used in 1978 and 1979. The breeding season was initiated the middle of May each year with approximately a 40-day AI period and a 3-week clean-up period using Angus bulls. Cows were palpated in October to determine conception rate.

Cows were trucked to the Range and Livestock Field Station, Cottonwood, in November where they were wintered on pasture with supplemental hay and protein and calved beginning March 1. In May, they were moved to Fort Meade near Sturgis for summer grazing and breeding.

Calf weights and calving difficulty scores were taken at birth. Scoring was a numerical system of 1 to 5 with 1 being no difficulty and 5 a caesarean birth. Calves were weighed monthly after arrival at Fort Meade. Calves were implanted twice with 36-mg Ralgro implants before weaning. The first implant was given in early May when the calves were branded, dehorned, vaccinated and one-half of the male calves castrated. The second implant was given in late July.

Milk production estimates were taken by the calf nursing method in April, June, July and October. Cow weights were taken five times throughout each year.

Calves were weaned in mid-October. All calves were placed in a feedlot and fed out for slaughter. Feedlot performance and carcass data were obtained and evaluated.

### Results

Reproductive performance of the crossbred cows is presented in table 1. Both groups of yearling heifers bred at a low level the first year due to insufficient weight gains before the breeding season. The S x A cows had a slightly higher percentage of calves born and weaned in 1977 and 1978 than the H x A heifers. This trend reversed in 1979 and 1980 with the H x A cows having higher calving and weaning percentages. Similar reproductive performance existed for the two groups of cows when all years were considered.

Milk production was determined the first 3 years of the study. In all 3 years, the S x A cows produced considerably more milk than the H x A cows.

Calving difficulty scores were similar for both groups of crossbred cows except for 2 years. As 3-year-old cows, the S x A had less calving difficulty than the H x A cows. However, the H x A cows had less calving difficulty than the S x A cows during the fourth calf crop. When all five calf crops are considered, the calving difficulty scores were the same.

Calf weights were greater for all parameters measured for calves from S x A cows (table 2). Birth weights of calves were similar from both cow breed groups. Considerable advantage existed for actual weaning weight, adjusted weaning weight and pounds of calf produced per cow for calves from the S x A cows. Overall calf production per cow exposed per year for the 4 years to date was 483 pounds for the S x A cows and 425 pounds for the H x A cows.

Feedlot performance and carcass results are presented in table 3. Initial and final weights and average daily gain were higher for calves from the S x A cows. Carcass data also resulted in an advantage for calves from S x A cows over calves from H x A cows. Dressing percent and rib eye area were greater and fat thickness less in all 4 years for calves from S x A

cows than from H x A cows. However, the calves from H x A cows had a higher percentage of the carcasses grading choice than calves from S x A cows in 3 of the 4 years. Yield grade was better for the calves from the S x A cows the 3 years they were bred to Charolais bulls. There was no difference in yield grade of the calves from S x A or H x A cows the first year when cows were bred to Angus bulls.

TABLE 1. REPRODUCTIVE PERFORMANCE AND COW WEIGHTS OF SIMMENTAL-ANGUS (S X A) AND HEREFORD-ANGUS (H X A) CROSSBRED COWS

Year	Cow breed	No. cows <sup>a</sup>	No. calves born <sup>b</sup>	No. calves weaned <sup>c</sup>	Estimated milk production <sup>d</sup> (lb/day)	Calving difficulty, puller needed (%)	Fall cow weight (lb)
1976	S x A	89	55 (62)	53 (60)	17.2	25	971
	H x A	90	57 (63)	55 (61)	14.2	26	894
1977	S x A	75	71 (95)	68 (91)	16.5	22	1104
	H x A	74	67 (91)	61 (82)	13.3	32	1049
1978	S x A	67	65 (97)	65 (97)	20.1	5	1130
	H x A	64	60 (94)	59 (92)	17.5	8	1052
1979	S x A	65	60 (92)	58 (89)	--	17	1148
	H x A	60	56 (93)	55 (92)	--	5	1072
1980	S x A	60	53 (88)	50 (83)	--	7	
	H x A	57	54 (95)	53 (93)	--	5	

<sup>a</sup> Includes all cows bred AI and exposed during breeding season.

<sup>b</sup> Calves born of cows exposed. Numbers in parentheses are percentages.

<sup>c</sup> Calves weaned of cows exposed. Numbers in parentheses are percentages.

<sup>d</sup> Milk production taken by calf nursing method.

TABLE 2. CALF PRODUCTION OF SIMMENTAL-ANGUS (S X A) AND  
HEREFORD-ANGUS (H X A) CROSSBRED COWS

Year	Calf breed <sup>a</sup>	Calf birth weight (lb)	Calf weaning weight (lb)	Adjusted calf weaning weight (lb)	Pounds calf produced per cow exposed
1976	A x SA	67	483	558	288
	A x HA	64	427	494	261
1977	C x SA	82	602	655	546
	C x HA	80	535	592	441
1978	C x SA	77	600	622	582
	C x HA	76	560	581	516
1979	C x SA	102	645	646	576
	C x HA	98	602	592	552
1980	C x SA	101			
	C x HA	99			

<sup>a</sup> First letter denotes sire breed (Angus or Charolais), the other two letters the dam breed (Simmental-Angus or Hereford-Angus).

<sup>b</sup> Adjusted 205-day weight to steer and mature cow bases.

TABLE 3. FEEDLOT AND CARCASS RESULTS FOR STEERS  
FROM CROSSBRED COWS

Year	Calf breed <sup>a</sup>	Feedlot			Carcass					
		Init. wt (lb)	Final shrunk wt (lb)	Daily gain (lb)	Hot carc. wt (lb)	Dress- ing per- cent	Grad- ing choice %	Fat thick- ness (in)	Rib eye area (sq in)	Yield grade
1976	A x SA	493	944	3.01	597	63.3	92	.50	11.2	3.2
	A x HA	444	850	2.71	521	61.3	80	.50	10.2	3.2
1977	C x SA	665	1076	2.49	709	65.9	60	.25	14.0	1.9
	C x HA	594	989	2.39	622	62.9	70	.33	12.7	2.1
1978	C x SA	615	1154	2.98	749	64.9	19	.29	15.4	1.7
	C x HA	584	1116	2.94	714	64.0	40	.31	14.6	1.9
1979	C x SA	723	1284	3.14	815	63.5	87	.20	14.7	1.9
	C x HA	684	1193	2.77	755	63.3	100	.24	13.7	2.1

<sup>a</sup> First letter denotes sire breed (Angus or Charolais), the other two letters the dam breed (Simmental-Angus or Hereford-Angus).