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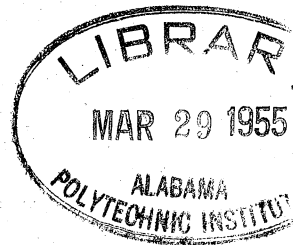
AGRICULTURAL EXPERIMENT STATION

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RESULTS of EXPERIMENTS with CROSSBREEDING of BEEF CATTLE
Black Belt Substation

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The Black Belt area of Alabama is the oldest beef-producing section of the State. The Hereford breed predominates among herds in the Black Belt counties, although there are many good herds showing Aberdeen-Angus and Short-horn breeding.

In 1945 and 1946 some beef producers of the Black Belt began using Brahman bulls in their herds. Interest in this breed spread widely, and the need for research comparing Brahman-sired calves with those sired by bulls of other breeds became apparent. Such a study was begun at the Black Belt Substation, with the first calves dropped in 1948.

Object of Study

Beef cattle producers served by the Black Belt Substation wanted to know if they were using the right practice in breeding Brahman bulls to grade cows. No thought was then being given to the value of Brahman breeding in dams. The question was: Would Brahman-sired calves sell as milk-fat animals to better advantage than calves sired by bulls of the breeds in common use in the area?

The cow herd at the Black Belt Substation consists of well-bred Herefords. The cows have been bred for quality and production since the Substation was established in 1931. Cows of this type were used in the crossbreeding study. Brahman, Hereford, and Shorthorn bulls were used.

Procedure

Records were available on the producing ability of the cows to be used. These records made possible an accurate division of the cows for breeding to bulls of the three breeds. All bulls were turned to the cows at the same time, with the time varying from December 1 to January 15 for the years involved in the study.

The most desirable calves for Black Belt conditions are dropped during fall and winter, from September through January. Spring calves, considered second choice, are dropped from February through June. Bulls are isolated from the cows so that no calves are born in midsummer.

This report covers 5 years for fall and winter calves sired by Hereford and Brahman bulls and 3 years for such calves sired by Shorthorn bulls. Records for spring calves cover 3 years. There were not enough spring calves sired by Shorthorn bulls to be included in the study.

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Management and feeding of the cows in the various breeding groups were as nearly alike as possible. The winter ration consisted mainly of Johnsongrass hay and cottonseed meal, with the spring and summer grazing being white clover and Dallisgrass.

Most of the calves in the study were sold at public auction as milk- and grass-fat animals with no supplemental feeding. Later in the period of this study, some of the calves were used in a creep-feeding experiment, but equal division was practiced according to breed.

Rotation of bulls was practiced to some extent. Two Brahman, two Shorthorn and five Hereford bulls were used. Advice of purebred breeders of the represented breeds was obtained in the selection of the bulls.

Weather Conditions

Weather conditions are considered normal for only the first 2 years (1948-49 and 1949-50) of the 5-year study with Hereford- and Brahman-sired calves. The last 3 years were abnormally dry, with grazing conditions below normal. Pasture grazing was below normal during the entire 3 years in which Shorthorn-sired calves were included. For the study with spring-dropped calves, only 1 year (1952) was below normal for grazing.

Results

No adjustment for age of calves was made in this study. All bulls were turned to the cows at the same time each year. In the tables, Brahman-sired calves are shown as marketed at a younger age. Considering the fact that such calves remain in the dam 10 to 12 days longer than do calves of the other breeds, it can be seen that the average market age from conception was approximately the same.

In Table 1 are the results of 5 years' records on calves sired by Brahman and Hereford bulls. The data show that there was some market advantage to the Brahman-Hereford calves over the Herefords. The advantage was in market weight and in price. Stocker and feeder buyers as well as slaughter buyers were on hand for bidding when the calves were sold at auction.

The results of the 3-year study that included Shorthorn-Hereford calves are given in Table 2. In this study, the values of the two groups of cross-bred calves were almost identical.

In Table 3 are the results of the 3 years for which records were available on spring-dropped calves. There was more spread in market weight between the spring-dropped Brahman-Hereford and Hereford calves than there was between the two groups of fall and winter calves, Table 1. The spring-dropped calves ran with their mothers the entire summer and early fall. The weather was hot most of this period, possibly accounting for some of the spread in final weight that favored the Brahman-cross calves.

The crossbred Brahman calves were considerably more tolerant of heat than were the other breeds in this study. They were observed often lying or grazing in the sun while the other calves sought shade.

Summary

The results of this experiment show some advantage to breeding either Brahman or Shorthorn bulls to well-bred Hereford cows grazing improved pastures under Black Belt conditions. The resulting calves showed additional gain over straight-bred calves and some advantage in market price.

Slaughter buyers did not discriminate against either type of crossbred calf, but some discrimination was shown by stocker and feeder buyers. None of the Brahman-Hereford calves were bought by stocker and feeder buyers, who showed some preference for the Herefords over the Shorthorn-Hereford crosses.

An experiment involving Brahman-Hereford, Shorthorn-Hereford and Hereford dams is now underway at the Black Belt Substation.

Table 1. Comparison of Hereford Calves with Brahman-Hereford Crossbred Calves, Fall- and Winter-Dropped, Black Belt Substation, 5-Year Average, 1948-49 to 1952-53

Breed	Number calves	Birth weight	Market age <u>1/</u>	Daily gain <u>2/</u>	Market weight	Market price	Market value
	<u>No.</u>	<u>Lb.</u>	<u>Days</u>	<u>Lb.</u>	<u>Lb.</u>	<u>Per cwt</u>	<u>Per head</u>
Hereford	122	67	271	1.77	524	\$27.03	\$141.64
Brahman-Hereford	100	77	262	1.83	534	27.23	145.41

1/ Brahman-sired calves remain in dam 10 to 12 days longer than other calves.

2/ Figured on home-weight basis.

Table 2. Comparison of Hereford Calves with Brahman-Hereford and Shorthorn-Hereford Crossbred Calves, Fall- and Winter-Dropped, Black Belt Substation, 3-Year Average, 1950-51 to 1952-53

Breed	Number calves	Birth weight	Market age	Daily gain	Market weight	Market price	Market value
	<u>No.</u>	<u>Lb.</u>	<u>Days</u>	<u>Lb.</u>	<u>Lb.</u>	<u>Per cwt</u>	<u>Per head</u>
Hereford	70	68	274	1.70	517	\$26.67	\$137.88
Brahman-Hereford	71	78	262	1.79	527	27.02	142.40
Shorthorn-Hereford	58	66	276	1.73	526	27.12	142.65

Table 3. Comparison of Hereford Calves with Brahman-Hereford Crossbred Calves, Spring-Dropped, Black Belt Substation, 3-Year Average, 1949, 1950, and 1952

Breed	Number calves	Birth weight	Market age	Daily gain	Market weight	Market price	Market value
	<u>No.</u>	<u>Lb.</u>	<u>Days</u>	<u>Lb.</u>	<u>Lb.</u>	<u>Per cwt</u>	<u>Per head</u>
Hereford	36	73	223	1.87	471	\$25.45	\$119.87
Brahman-Hereford	28	81	218	1.96	493	25.49	125.67

