

FIELD DAY REPORT - 1993

Texas A&M University Agricultural Research and Extension Center at Overton

**Texas Agricultural Experiment Station
Texas Agricultural Extension Service**

Overton, Texas

May 28, 1993

Research Center Technical Report 93-1

All Programs and information of the Texas Agricultural Experiment Station and Texas Agricultural Extension Service are available to everyone without regard to race, color, religion, sex, age, or national origin.

Mention of trademark of a proprietary product does not constitute a guarantee or a warranty of the product by the Texas Agricultural Experiment Station or Texas Agricultural Extension Service and does not imply its approval to the exclusion of other products that also may be suitable.

EVALUATION OF BIRTH AND WEANING TRAITS OF F₁ CALVES SIRED BY THREE TROPICALLY ADAPTED BREEDS OF BULLS

A. D. Herring, J. O. Sanders, R. D. Randel, D. A. Neuendorff
J. W. Holloway, B. G. Warrington and R. E. Knutson

Background. An experiment was initiated in 1991 to evaluate the Tuli and Boran African breeds of cattle. The advantages of utilizing *Bos indicus* cattle in crossbreeding systems have been shown with Brahman cattle; however, there are disadvantages when they are more than one-half Brahman with regard to carcass quality and age at puberty.

Research Findings. This study is a part of a collaborative project that includes the Texas Agricultural Experiment Station (McGregor, Overton and Uvalde), the United States Meat Animal Research Center at Clay Center, Nebraska, the USDA Stations in Ft. Reno, Oklahoma and Brooksville, Florida, and the University of Georgia. Artificial insemination matings were made in the spring of 1991 and 1992.

At McGregor, Hereford and Angus (A) cows were bred to Tuli (T), Boran (BO) and Brahman (BR) bulls and BR cows were bred to BO and BR bulls. At Overton, BR cows were bred to A, BR and T bulls. At Uvalde, A cows were bred to BR, T and A bulls. The first calves were born in the spring of 1992 and weaned the following fall. A total of 360 birth and 334 weaning records were analyzed.

Birth and weaning records were evaluated for the F₁ calves within the type of dam (British or BR). Out of British cows (Table 1), BR-sired calves were the heaviest (94.1 lb) at birth followed by BO- (90.0) and T-sired calves (79.8), respectively. At McGregor, Boran-sired calves had the longest gestation (293.7 days) followed by BR- (290.5) and T-sired calves (289.4). Bull calves were carried an average of three days longer than heifers and were 10.6 lbs heavier at birth. Calves born at McGregor were 14.7 lbs heavier than at Uvalde. A sex by sire breed interaction was seen among calves born to British cows; BO- and BR-sired bull calves weighed approximately 14 lbs heavier than heifers at birth, whereas the T-sired bull calves weighed only about 4 lbs more than T-sired heifers.

Among calves produced by BR cows (Table 2), no significant differences were seen among birth weights due to the breed of sire. Angus-sired calves were carried the shortest (280.7 days) followed by T- (287.2), BR- (292.2) and BO-sired calves (294.3), respectively. Calves born at McGregor were 11.3 lbs heavier than those at Overton. Bull calves were 4.6 lbs heavier and were carried an average of 2.4 days longer.

Analyses of weaning traits of calves out of British dams are summarized in Table 1. Brahman-sired calves were the heaviest (491.6 lbs) followed by BO- (468.6) and T-sired calves (445.4). Brahman-sired calves were also the tallest (117.0 cm) and had the highest preweaning average daily gain (1.80 lb/day). Boran-sired calves ranked next (110.9 cm, 1.71 lb/day) followed by T-sired calves (109.7 cm, 1.65 lb/day). Calves born at McGregor were 78.7 lbs heavier at weaning and had .30 lb/day greater average daily gain than those born at Uvalde; however, those born at Uvalde were 2.1 cm taller at weaning. Bull calves were 37.1 lbs heavier, 1.3 cm taller and had .12 lb/day greater gain than heifers.

Among calves produced by BR cows (Table 2), A-sired calves were the heaviest (486.8 lbs) followed by T- (461.8), BR- (451.7) and BO-sired calves (438.5). Brahman-sired calves were the tallest at 117.8 cm, whereas A-sired calves had the highest preweaning average daily gain at 2.01 lb/day. Bull calves were 39.4 lbs heavier than heifers and were 2.5 cm taller at weaning. Calves born at McGregor were 25 lbs heavier, whereas calves born at Overton were 3.8 cm taller.

Application. This is the summary of the first year of data evaluated on this project. It is possible that these African breeds of cattle may be useful in crossbreeding programs in the southern U.S. Additional data will be summarized and furnished as collected.

Table 1. Least squares means for birth and weaning traits for calves out of Angus and Hereford cows.

	n	BWT	GEST	n	WWT	HHT	ADG
<u>Breed of Sire</u>							
Brahman	85	94.1	293.4	77	491.6	117.0	1.80
Tuli	86	79.8	292.2	78	445.4	109.7	1.65
Boran*	49	90.0	(296.3)	43	468.6	110.9	1.71
<u>Sex of Calf</u>							
Heifers	100	82.6	292.5	90	450.0	111.9	1.66
Bulls	120	93.2	295.4	108	487.1	113.2	1.78

*Boran-sired calves were produced only at McGregor. The statistical model included a location adjustment which yielded the least squares means shown. This is likely too high an estimate in Boran for gestation length; mean gestation length at McGregor was 293.7 days for Boran.

Table 2. Least squares means for birth and weaning traits for calves out of Brahman cows.

	n	BWT	GEST	n	WWT	HHT	ADG
<u>Breed of Sire</u>							
Brahman	57	70.0	292.2	54	451.7	117.8	1.84
Angus	27	70.2	280.7	27	486.8	114.2	2.01
Tuli	37	69.0	287.2	36	461.8	114.2	1.89
Boran*	15	73.3	(294.3)	16	438.5	117.8	1.77
<u>Sex of Calf</u>							
Heifers	84	68.3	287.4	81	440.0	113.5	1.80
Bulls	52	72.9	289.8	52	479.4	116.0	1.96

*See table 1 footnote. Mean gestation length at McGregor was 293.6 days for Boran.