



# Tropically Adapted Beef Cattle: Puberty of Bulls

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## BOTTOM LINE

Tuli X Angus bulls were similar to Angus in being earlier maturing than Brahman influenced bulls.

### Summary

- Tuli X Angus and Angus were younger and lighter at puberty, while Brahman were older and heavier and Angus X Brahman and Tuli X Brahman were intermediate.
- Brahman had the greatest percent sperm defects and the lowest sperm motility of the breeds studied.

### Introduction

Most of the breeds adapted to the tropics that are available in the U.S. are late maturing. This late maturity in the bull results in either delays in reproduction or increased feed expenditures to speed the animal's rate of maturation. The purpose of this experiment was to evaluate a recently imported, tropically adapted breed (Tuli from Zimbabwe) to the standard tropically adapted breed (American Brahman) and the temperate adapted standard (Angus).

### Experimental Approach

Fourteen Angus, 12 Angus X Brahman, 14 Brahman, 14 Tuli X Brahman and 5 Tuli X Angus bulls were generated at the Texas Agricultural Experiment Stations at Overton, McGregor and Uvalde and moved to Overton at weaning (in Oct at about 210 d of age). At Overton they grazed rye-ryegrass

pastures overseeded on a Coastal bermudagrass sod. During this time they were fed a 16% crude protein concentrate ration (82.5% corn, 16.5% soybean meal). After the bulls averaged 290 d of age, they were weighed, scrotal circumference was measured, and the bulls were electroejaculated at 28-d intervals. Puberty was defined as the time when the first ejaculate contained  $50 \times 10^6$  sperm cells with at least 10% forward motility.

### Results

The Angus and Tuli X Angus were the youngest and lightest bulls and had the least scrotal circumference at puberty while the Brahman was the oldest and heaviest and had the greatest scrotal circumference (Table 1). The Tuli X Angus bulls had the least sperm defects while the other breeds were similar. Brahman-influenced bulls had the lowest sperm motility at puberty.

Table 1. Characteristics of bulls at puberty.

ITEM	BREED OF BULL				
	Angus	Angus X Brahman	Brahman	Tuli X Angus	Tuli X Brahman
Weight, lb	571 <sup>ac</sup>	740 <sup>b</sup>	751 <sup>b</sup>	489 <sup>c</sup>	669 <sup>ab</sup>
Scrotal	10.1 <sup>ab</sup>	11.6 <sup>b</sup>	10.4 <sup>a</sup>	10.7 <sup>ab</sup>	11.1 <sup>ab</sup>
Age, d	325 <sup>a</sup>	414 <sup>b</sup>	463 <sup>c</sup>	354 <sup>a</sup>	426 <sup>bc</sup>
Sperm Defects <sup>d</sup> , %	42.4 <sup>ab</sup>	42.8 <sup>ab</sup>	55.3 <sup>a</sup>	19.0 <sup>c</sup>	54.8 <sup>a</sup>
Sperm Motility, %	64.6 <sup>a</sup>	66.2 <sup>a</sup>	59.9 <sup>ab</sup>	65.7 <sup>a</sup>	56.9 <sup>b</sup>

<sup>abc</sup>Means in the same row with different superscripts differ (P<.05).

<sup>d</sup>Sperm defects include head, midpiece and tail defects, and proximal droplets.