

## USE OF REAL-TIME ULTRASOUND (RTU) MEASUREMENTS AND CARCASS TRAITS TO ASSESS INTERNAL FAT IN RESIDUAL FEED INTAKE (RFI)-INDEXED BRAHMAN BULLS UNDER GRAZING CONDITIONS

Hughes<sup>1</sup>, C. A., F. R. B. Ribeiro<sup>1\*</sup>, J. A. Carter<sup>1</sup>, T. D. A. Forbes<sup>2</sup>, F. M., Rouquette<sup>3</sup>, Jr., L. O. Tedeschi<sup>4</sup>, R. D. Randel<sup>3</sup>

<sup>1</sup>Texas A&M University-Commerce, Commerce TX

<sup>2</sup>Texas AgriLife Research, Uvalde TX

<sup>3</sup>Texas AgriLife Research, Overton TX

<sup>4</sup>Texas A&M University, College Station TX.

This study evaluated RTU and carcass traits to determine total internal fat (**IFAT**) of Brahman bulls (n = 16) grazing Coastal bermudagrass (*Cynodon dactylon* (L.) Pers]) at two stocking rates (**SR**) for 60 d. Prior to the grazing trial, animals were fed a high roughage diet for 70 d, stratified as efficient (**LRFI**) or inefficient (**HRFI**), and randomly assigned to high (**HSR**) or low (**LSR**) SR pastures. RTU measurements were collected 5 d prior to harvest off pasture and consisted of KPH depth (**uKPH**), backfat thickness (**uBF**), ribeye area (**uREA**), rump fat (**uRUMP**), i.m. (**uIMF**), and BW. Bulls were harvested at 16 to 18 mo of age and about 450 kg. Shrunken BW (**SBW**) was recorded after an 18 h fast prior to harvest. At harvest KPH and internal organs were separated, dissected, and weighed. Total internal fat was determined by adding the KPH and physically separated organ fat weights. After a 48-h chill complete carcass data was collected. Data were analyzed using a split-plot design in a 2x2 factorial arrangement with pastures within SR as random factors. Prediction equations were developed using the PROC REG procedure with the stepwise selection. There were no interactions or main effects of SR ( $P > 0.05$ ) and RFI ( $P > 0.05$ ) on any of the carcass traits or RTU measured; except for carcass backfat that was significant ( $P = 0.051$ ) with LRFI bulls having more backfat than HRFI bulls (0.22 vs. 0.13 cm, respectively). A linear regression to predict IFAT from KPH and uRUMP ( $R^2$  of 0.61 and square root of mean square error of 1.54 kg) was developed. The stepwise selection indicated a partial  $R^2$  of 0.53 for KPH and 0.08 for uRUMP. A previously published equation to predict IFAT from KPH accounted for 53% of the IFAT variation of our data. No differences between RFI and SR using RTU were detected for Brahman bulls harvested direct off pasture. The RTU may improve the predictions of IFAT when KPH is available. A second year of data will be used to improve the precision of the IFAT predictive equations.

Key words: ultrasound, internal fat, carcass