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RATIO BETWEEN HEIGHT AND WIDTH OF *LONGISSIMUS* MUSCLE AS AN INDICATOR OF RETAIL BEEF YIELD

RAZÃO ENTRE ALTURA E LARGURA DO MÚSCULO LONGISSIMUS COMO INDICADOR DO RENDIMENTO DE CORTES CÁRNEOS DE BOVINOS

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The technique of ultrasound is a noninvasive method performed *in vivo*. The technology has been used to measure carcass traits as *longissimus* muscle area (LMA), subcutaneous fat and marbling. It allows accurate data measures with no animal slaughter and a greater number of animals evaluated in a period, resulting in economic benefit. Some technicians recommend the use of the relation between *longissimus* muscle height and width as a better indicator trait of retail beef yield than LMA itself. The purpose of this study was to calculate the ratio between *longissimus* muscle height and width (RATIO) in order to estimate the simple correlation between RATIO, obtained *in vivo*, and dressing percentage (DP%), retail beef yield expressed in kg (YIELD_kg) and percentage of retail beef yield (YIELD_%), obtained after slaughter. A total of 116 Nellore bulls born between 2006 and 2009, with an average age and weight of 18 ± 1.10 months and 437 ± 60 kg at slaughter, which were raised and finished at Centro APTA Bovinos de Corte, Sertãozinho, São Paulo, Brazil, were used. Among 116 animals, 33 were slaughtered in 2008, 34 in 2009, 25 in 2010 and 24 in 2011. Before slaughter images were obtained by ultrasound between the 12th and 13th ribs, transversely over the *longissimus* muscle with immobilized animals in containment chamber, using the ultrasound machine Pie Medical 401347 - Aquila (Esaote Europe BV), 18 cm linear probe of 3.5 MHz. On that occasion, the animals were weighed (fasted live weight). Subsequently *longissimus* muscle height, width and area were measured using the Echo Image Viewer 1.0. Carcasses were weighed before and after the chilling period. DP% was calculated as the ratio between fasted live weight and hot carcass weight. The sum of the retailed meat cuts weights corresponded to the retail beef yield and was expressed as kilograms (YIELD_kg) and as percentage of cold carcass weight (YIELD %). Simple correlations were estimated using PROC CORR, SAS (SAS Inst., Inc., Cary, NC). The average of *longissimus* muscle height, width, LMA, RATIO, DP%, YIELD_kg, and YIELD_% were: 60.9±9.02 mm, 132±10.1 mm, 67.4±8.78 cm^2, 0.46±0.07 mm/mm, 61.0±1.54%, 174±23.4 kg and 66.3±2.07%, respectively. The simple correlation between RATIO and DP%, YIELD_kg, and YIELD_% were low and not significant (Table 1). These correlations were much lower than the correlations between LMA and YIELD_kg, and YIELD_%. Based on the correlation coefficients estimated, it would be better to use LMA instead of RATIO in order to predict retail beef yield. The RATIO is not a good indicator of retail beef yield in young Nellore bulls.

Table 1. Simple correlation between RATIO, LMA, *longissimus* muscle height, *longissimus* muscle width, and DP%, YIELD_kg and YIELD_%

Trait	DP%	YIELD_kg	YIELD_%
RATIO	0.08	0.01	-0.14
LMA	0.35	0.57	-0.12
longissimus height	0.17	0.23	-0.14
longissimus width	0.19	0.43	0.00

Keywords: carcass edible portion, rib eye area, ultrasound.

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