Equations for estimating commercial meat cuts of water buffaloes finished in feedlot

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Introduction

Estimating the weight of commercial meat cuts of water buffaloes is important to complement the evaluation of animal performance.

Objective

Develop equations to estimate the weight of meat cuts of water buffaloes finished in feedlot.

Material and Methods

Seventy-five non-castrated males (25 of each genetic group: Jafarabadi, Mediterranean and Murrah) were used and allocated in collective pens to receive feeding and water ad libitum for 240 days. Body weight (BW), hip height (HH), and ultrasound assessments (backfat thickness – BFT; Ribeye area – REA) were performed and tested as independent variables. After the slaughter, the non-carcass components of each animal were weighed to obtain the empty body weight (EBW). Hot carcass weight (HCW), cold carcass weight (CCW), carcass length (CL, cm), carcass depth (CD, cm), and carcass compactness index (CCI, kg/cm) were obtained and tested as independent variables. The meat cuts (Brisket, Flank plate, Rump, Rump cap, Striploin, and Tenderloin) were obtained from right half-carcass and weighed. The equations were determined using the stepwise regression method and Mallows' Cp criterion and processed by the REG procedure in SAS.

Results

Table 1. Multiple regression equations to estimate the weight of commercial meat cuts of water buffaloes

Meat cuts, kg	Equations	SE	R^2	*Cp*
Striploin	-0.088-0.004×EBW+0.020×HCW+0.019×CCI-2.949×CL	0.35	0.85	3.97
Tenderloin	-2.125+0.008×CCI+1.863×CL-1.697×CD+0.698×HH-0.014×BFT	0.12	0.84	5.89
Rump Cap	-0.485-0.002×EBW+0.011×CCI-1.291×CL	0.19	0.78	2.20
Rump	-4.975-0.004×EBW-0.004×HCW+0.032×CCI+4.771×CL-1.662×CD-0.017×BFT	0.18	0.84	6.17
Flank plate	-2.643-0.013×HCW+0.028×CCI+2.681×CL-1.021×HH	0.12	0.68	2.73
Brisket	0.165-0.004×EBW+0.007×HCW+0.017×CCW	0.27	0.81	1.81

EBW = Empty body weight (kg), HCW = Hot carcass weight (kg), CCW = Cold carcass weight (kg), CL = carcass length (cm), CD = carcass depth (cm), CCI = carcass compactness index (kg/cm) calculated as CCI = CCW/carcass internal length, REA = Ribeye area (cm2), BFT = Back fat thickness, (mm), HH = hip height (cm), SE = standard error, R^2 = coeficiente of determination, Cp = Mallows' Cp.

Water buffaloes in feedlot, ultrasound measurement, carcass in slaughterhouse, carcass measurement, and separation of commercial meat cuts, respectively.

Highlights

- ✓ The independent variables which were included differed among the meat cut equations which can use both independent variables obtained in vivo and postmortem, or only those obtained postmortem.

Conclusions

In conclusion, the equations for estimating commercial meat cuts present good prediction and can be used for different GG of water buffaloes.

Experimental feedlot of the Center for Tropical Research in Water Buffaloes - CPTB

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