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Introduction

In order to achieve a rational water buffalo production is needed to provide diets based on nutritional requirements. However, to make this possible is important determine the weight at maturity and according to genetic group.

Objective

Determine the weight at maturity (WM) of water buffaloes of three genetic groups slaughtered at different weights.

Material and Methods

- 153 non-castrated males:
 - 314 ± 117 kg of Initial body weight;
 - 390 ± 32 days of Initial age;
- Three genetic groups (GG):
 - Jafarabadi, Mediterranean, Murrah;
- Feedlot system;
- Three slaughter weights:
 - 420 kg, 480 kg, 540 kg
- Analyses:
 - Muscle, Fat, Bone
- Statistical analysis:
 - Nonlinear regressions: body composition of water, CP and ash;
 - Exponential model: adjust the data for the content of the EE;
 - Random coefficient models: identify fixed and random effects;
 - NLMIXED procedure in SAS;
 - The genetic group: tested as fixed effect and year as a random effect;
 - Body CP was determined based on CP fat-free dry matter (CPFFDM).

Results

There was effect of GG for WM model ($p=0.037$), thus the WM was determined for each GG. The models suggest that Jafarabadi, Mediterranean and Murrah reach maturity at 505.93, 494.40, and 423.79 kg of EBW.

Table 1. Regression equations for predicting weight at maturity (WM) by empty body weight (EBW) of water buffaloes from three genetic groups (GG) finished in feedlot

Genetic group	Equations for weight at maturity (CPFFDM)
Jafarabadi	$79.279 \times (1 - 1.17 \times e^{-0.010 \times EBW})$
Mediterranean	$79.186 \times (1 - 1.18 \times e^{-0.011 \times EBW})$
Murrah	$78.793 \times (1 - 11.99 \times e^{-0.018 \times EBW})$

CPFFDM = Crude protein fat free dry matter; Weight maturity in kg of EBW; EBW = Empty body weight.



Separation of tissues (muscle, fat, and bone) and analyses at laboratory, respectively.

Highlights

- ✓ Weight at maturity is dependent of genetic group;
- ✓ Weight at maturity (kg of EBW)
 - ✓ Jafarabadi 505.93
 - ✓ Mediterranean 494.40
 - ✓ Murrah 423.79

Conclusions

The WM of water buffaloes is dependent on the GG reaching 505.93, 494.90, 423.79 kg of EBW for the Jafarabadi, Mediterranean, and Murrah genetic groups.



Water buffalo in the automatic feeder.

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