Retained energy and energetic efficiency indexes for Nellore bulls divergent in residual feed intake

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Abstract

The protein-to-fat ratio in the deposited tissues differ between animals classified as low and high residual feed intake (L-and H-RFI), as well as metabolic processes (e.g. mitochondrial activity and protein degradation). Therefore, the retained energy and efficiency should follow the same pattern.

Aim

This study was carried out aiming to quantify the retained energy and efficiency indexes of animals classified by RFI.

Material & Methods

- **Thirty-four Nellore bulls (15 classified as L-RFI and 19 as H-RFI), were feedlot finished and slaughtered with 385 ± 40.0 kg of body weight (BW) and 520 ± 26.2 days of age.**
- **At the beginning of the experiment, five L-RFI and three H-RFI were slaughtered and used as reference bulls. Eight bulls, four L-RFI and four H-RFI, were fed at maintenance, receiving 65 g of DM/kg$^{0.75}$ BW and 18 bulls (10 L-RFI and eight H-RFI) were fed ad libitum.**
- **When two ad libitum bulls reached 4 mm of subcutaneous fat thickness, one maintenance bull was randomly chosen and slaughter at the same day**
- **After slaughter, centesimal composition of the empty body and carcass was measured.**

Results

- **The L-RFI had greater protein retention than H-RFI (248 vs. 142 g/d; *P* = 0.009).**
- **Same fat and energy retention (average of 313 g/d and 4.12 Mcal/d, respectively) were found.**
- **The energetic efficiency indexes: heat production per metabolic energy intake (Mcal/Mcal) and gain-to-feed (kg/kg) ratio did not differ between the RFI classes.**

Conclusion

- **With the same energetic efficiency, L-RFI are more leaner. This results indicates an association of genetic selection for RFI and maturity patterns.**

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