

PERFORMANCE, INTAKE AND FEED EFFICIENCY OF NELLORE YOUNG BULLS HOUSED IN INDIVIDUAL OR GROUP PENS

DESEMPENHO, CONSUMO E EFICIÊNCIA ALIMENTAR DE BOVINOS NELLORE CONFINADOS EM BAIAS INDIVIDUAIS OU COLETIVAS

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Feed is the most expensive input in any livestock production system including beef cattle, therefore feed efficiency improvements can contribute to cost reduction. Residual feed intake (RFI) is one of the important measures of animal efficiency and can be defined as the difference between actual feed intake (measure at individual or group pens) and predicted feed intake that is required for the observed rate of gain and body weight (BW). The objective here was to evaluate the housing type (individual or group) on variation of traits such as dry matter intake (DMI, kg/d and %BW), average daily gain (ADG), RFI and gain:feed (G:F) in a dataset of Nelore young bulls obtained from performance tests of 83±16 days long after adaptation period, conducted between 2007 and 2013. The animals (273 ± 27 days of age at the beginning of the test) were obtained from selected, traditional and control Nelore lines of Instituto de Zootecnia. The animals were housed in individual pens (IP) (2007-2012) or group pens (GP) (2012-2013) equipped with the GrowSafe® system (voluntary intake calculated automatically by the system). In IP, animals were fed twice a day and had water available all the time. Voluntary food intake was calculated as the difference between supplied and refused food. Leftovers were collected daily, weighed, and then adjusted to correspond to 10% of the total supplied. A mixed model including housing type as fixed effect and year of test as random effect was fitted. Different residual variances for housing type effect was considered using GROUP option of REPEATED command (PROC MIXED, SAS Inst. Inc., Cary, NC), and AIC and BIC values were substantially lower compared to model with homogeneous residual variance. No differences ($P \geq 0.05$) were observed in Nelore young bulls housed in IP or GP on DMI (kg/d) and RFI (Table 1). However, difference occurred for G:F ($P=0.0018$) and DMI (%BW; $P=0.0146$), and ADG tended to show difference ($P=0.0692$) between housing types. In this context, IP seems to provide more precise measures for DMI (%BW) and G:F than GP.

Table 1. Least squares means (\pm SE) of dry matter intake, average daily gain and feed efficiency of Nelore young bulls housed in group or individual pens

Traits	Group pens (n = 209)	Individual pens (n = 327)	P value
DMI (kg/day)	7.020 \pm 0.318	6.762 \pm 0.265	0.2696
DMI (%BW)	2.511 \pm 0.074	2.380 \pm 0.062	0.0146
ADG (kg/day)	0.990 \pm 0.089	1.062 \pm 0.084	0.0692
RFI (kg/day)	0.004 \pm 0.070	0.004 \pm 0.019	0.9981
G:F	0.141 \pm 0.011	0.157 \pm 0.010	0.0018

Keywords: beef cattle, housing type, residual feed intake.

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