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CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

EFFECT OF ENERGY INTAKE ON THE FEEDLOT PERFORMANCE OF DORPER x SANTA INÊS LAMBS

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The purpose of this study was to evaluate the performance of crossbred Dorper x Santa Inês lambs receiving three feeding levels on feedlot. Twenty four non-castrated male lambs with four months of age and 20.44 ± 4.03 kg of body weight were used. The design was completely randomized with three treatments and eight replicates, where treatments were the increase of feeding level at 1.00, 1.75 and 2.50 times the metabolizable energy requirement for maintenance (MEm) according to National Research Council (NRC, 2007). Lambs were fed in individual pens during 79 days, receiving diets composed of 40% of *Cynodon* spp. hay and 60% of concentrate feed on dry matter (DM) basis. The diet was isoproteic and isoenergetic, containing 157 g kg DM^{-1} of crude protein (CP) and 614 g kg DM^{-1} of total digestible nutrients (TDN). Lambs were weighed every 14 days after 16 hours of fasting to determine the average daily gain (ADG). The intake of dry matter (DMI), crude protein (CPI), neutral detergent fiber (NDFI) and total digestible nutrients (TDNI) were calculated by difference between the amount of these components in the feed and leftovers. Feed conversion ratio (FCR) was calculated by the ratio between DMI and ADG. Data were analyzed by regression until second order (quadratic) regarding the feeding levels. The DMI, CPI, NDFI, TDNI and ADG increased linearly ($P<0.05$), while FCR had a quadratic response ($P<0.05$) to feeding levels. Between the levels of 1.00 and 2.50 times MEm there was an increase of 529 to 1,155 g day^{-1} in DMI, 83 to 181 g day^{-1} in CPI, 198 to 433 g day^{-1} in NDFI, 325 to 710 g day^{-1} in TDNI, and 55 to 249 g day^{-1} in ADG. Based on the regression equation for FCR, the minimum value estimated for this trait was 4.52 kg DM kg $gain^{-1}$ at the feeding level of 2.28 times MEm. The lambs metabolizable energy requirement needs to be supplied to support their maintenance and growth activities, and provide high growth rates. Therefore, the increase of DMI and nutrients intake improved the FCR between the feeding levels of 1.75 and 2.50 times MEm compared to the maintenance level (5.37 and 4.66 *vs.* 9.43 kg DM kg $gain^{-1}$). The increase of feeding level improves the feedlot performance of Dorper x Santa Inês lambs, where the better FCR can be reached at the level of 2.28 times MEm.

Keywords: average daily gain, dry matter intake, feed conversion ratio, metabolizable energy