NET ENERGY REQUIREMENT FOR MAINTENANCE OF SANTA INES CROSSBRED SHEEP

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Studies on the nutritional requirements of hair sheep present variability, being the formulation of diets based on the recommendations of international committees. Recent reports suggest that Santa Inês sheep require less energy compared to wool sheep breeds. However, the results are controversial, which proves the importance of new research. Therefore, we sought to formulate the requirement of net energy for maintenance (NE_m) of growing Santa Ines crossbreed sheep. We used data from three comparative slaughtering experiments using castrated feedlot sheep, all of which had similar age and body weight (BW) (20.74 ± 2.99 kg), adding up 150 animals. The sheep were subjected to digestibility tests based on the total collection of feces. The digestible energy intake (DEI) was multiplied by 0.82 in order to estimate the metabolizable energy intake (MEI). The body energy retention (ER) was calculated with basis on the protein and fat contents, using caloric values of 5.6405 and 9.3929 Mcal/kg, respectively. The relation between the fasting body weight (FBW) and the empty body weight (EBW) of all the animals was used to build the nonlinear regression equations, in each experiment, in order to determine the starting EBW and the starting body composition of the remaining animals. Based on the difference between the starting and final body composition, we calculated the energy retention. The heat production (PHeat) was defined as the difference between the MEI and the energy retention. The NE_m was estimated by the nonlinear regression of the PHeat as a function of the MEI: $PHeat = a \times e^{\,b \times MEI}$. The NLMIXED procedure of the SAS software was used to estimate the parameters of the model. Parameters of the fixed effects were considered significant when P<0,05. The experiments were used as random effect. The estimated value for NE_m foi 70.44 [66.14; 74.74] kcal $EBW^{-0.75}$ day^{-1} on a 95% trust interval, the values reported by authors who used animals with similar characteristics match the interval verified in this study. Converting the NE_m to the metabolic FBW ($FBW^{0.75}$) base, we obtain 59.37 [56.11; 63.40] kcal $FBW^{-0.75}$ day^{-1}, and this interval fits into the mean international recommendations for sheep, without adjustments. The results achieved in this study do not support the hypothesis that Santa Ines crossbreed sheep need less net energy for maintenance than specified by the international recommendations.