

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

EFFECT OF ENERGY INTAKE ON THE BLOOD METABOLITES OF DORPER x SANTA INÊS LAMBS FED ON FEEDLOT

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The aim of this study was to evaluate the levels of blood metabolites in 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 (ME_m) 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). Blood samples from lambs were collected every 14 days by jugular venipuncture after 16 hours of fasting. Plasma levels of albumin, creatinine, urea and glucose were measured. Data were analyzed in mixed model with repeated measurements on time regarding the fixed effects of feeding levels, time and their interactions. The variables that differed among feeding levels were submitted to regression analysis until the second order (quadratic). The feeding levels not affected ($P > 0.05$) plasma albumin (3.73 ± 0.03 g dL⁻¹). However, plasma levels of urea and glucose increased linearly ($P < 0.05$), while the plasma level of creatinine decreased linearly ($P < 0.05$) with feeding levels. Between the levels of 1.00 and 2.50 times ME_m there was an increase of 36.1 to 45.7 mg dL⁻¹ in plasma urea, 73.2 to 81.0 mg dL⁻¹ in plasma glucose, and a decrease of 1.36 to 1.16 mg dL⁻¹ in plasma creatinine. The increase of plasma urea may be related to the great protein degradation in the rumen due to increase of CP intake with the feeding levels. The increase of plasma glucose may have been determined by the great carbohydrate availability and, hence, the increase of propionate synthesis in the rumen with feeding levels. Finally, the decrease of plasma creatinine may be indicating a decrease of muscle proteolysis with feeding levels. Thus, the feeding level affects the levels of blood metabolites in Dorper x Santa Inês lambs, which present a muscle catabolism status when fed at the maintenance level that is reversed to a muscle anabolism status with the increase of feeding level.

Keywords: creatinine, glucose, metabolizable energy, plasma, urea

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Apoio Institucional:



Organização:

