

Blood parameters of crossbred goats supplemented with vegetable oil

Darklê L. Souza^{1*}, Ariosvaldo N. Medeiros², Marco A. D. Bomfim³, Marcos J. Araujo⁴, Aldivan R. Alves², Maria de Lourdes M. de Souza², Fabiana Satake² and Rita de Cássia R. E. Queiroga⁵

* ¹Federal Institute of Alagoas – Campus Santana do Ipanema, Santana do Ipanema, Alagoas, 57500-970, Brazil; ²Federal University of Paraíba, Areia, Paraíba, 58397-000, Brazil; ³National Goat Research Center - EMBRAPA, Sobral, Ceará, 62010-970, Brazil; ⁴Federal University of Piauí, Bom Jesus, Piauí, 64900-000, Brazil; ⁵Federal University of Paraíba, João Pessoa, Paraíba, 58059-900, Brazil.

* darkleluiza@yahoo.com.br

In the Semiarid region of Northeast Brazil the native vegetation has great productive potential of vegetable oils. Among the oils existing the faveleira, the Sesame and Castor has aroused interest in applicability. This native vegetation due to its multiplicity of use has great socio-economic value to man, regarding food and feed. Considering the current data on the effects of inclusion of rich lipid sources in diets for lactating goats evaluated the effects of the inclusion of vegetable oils in the diet of crossbreed Saanen x Alpine goats on the concentrations blood urea nitrogen (BUN), glucose, aspartate aminotransferase (AST), alanine aminotransferase (ALT) and triglycerides. A double Latin square experimental design (4×4) using 8 confined crossbreed Saanen x Alpine goats was performed according to the following treatments: nonsupplemented (control), 4% castor oil (CO), 4% sesame oil (SO) and 4% faveleira oil (OF). Blood samples (about 10 ml) were collected via jugular vein after the morning milking on the 19th day of each experimental period. The Blood samples were collected into an empty tube and centrifuged at 3.500 rpm for 15 minutes and supernatant stored at -20 °C prior to BUN, glucose, AST, ALT and triglycerides analyses. The first blood collection was performed in fasting animals for determination of BUN, glucose, AST, ALT and triglycerides analyses and after 2, 4 and 6 hours from feeding only BUN and glucose analyses were made. The percentage of BUN was determined considering that plasma urea contains 46% of nitrogen. Blood metabolites were measured using diagnostic kits (Enzymetic Colorimetric Test). Treatment means were compared by Tukey's test, adopting $\alpha = 0.05$ using SAS (SAS Inst. Inc., Cary, NC.). For the BUN and glucose values we adopted the plot design. For plasma glucose measured at the four times of collection (0, 2, 4, 6 hours after morning feeding), it weren't observed influence ($P > 0.05$) of lipid supplementation. On the other hand, the BUN was influenced by oil addition in the diets. The animals that received diets added of CO or SO presented the highest BUN concentration ($P < 0.05$). Regarding the time of collection, it was observed higher BUN value at time 0 (before feeding), considered intermediate for times 4 and 6 and lower for time 2. The animals that received the diet added with CO presented higher concentrations of BUN at time 0 and the ones that received the diet added with FO presented lower concentrations at time 6. The interaction treatment x time of collection wasn't significant ($P = 0.76$). The studied lipid supplementation didn't change the blood concentration of ALT, AST, triglycerides and glucose. The castor oil added on a 4% basis on the diet increases the concentration of BUN during fasting state.

Keywords: castor oil, dairy goats, faveleira oil, blood metabolites, sesame oil