

Fatty acid profile in sheep fed diets based on potato bran pellets with urea

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The waste generated in the potato production chain are ingredients with potential use in ruminant feed. However, because they are perishable products, the best way to be used in animal feed is one in which it is possible to preserve them. There are different ways of processing these wastes, such as the production of the meal, which is obtained by dehydration of tubers unsuitable for commercialization. Urea is used in ruminant feed in order to reduce costs with protein supplementation. In this context, pelletizing potato meal with the urea becomes an attractive alternative because it may increase the speed of fermentation of starch in the rumen and reduce the intensity of release of ammonia from urea. The aim of this study was to determine the fatty acid profile and ruminal pH of sheep fed diets based on bran potato pelletized urea. We used four male sheep, weight 46 ± 5.3 kg, rumen fistulated, arranged in a Latin square and housed in metabolic cages. The animals received Tifton 85 hay (*Cynodon* spp) and four treatments for 60% bran potato mixed with other ingredients, supplemented with 0, 4, 8 and 12% of urea and ammonium sulfate at a ratio of 9:1. The list of ingredients and their proportions are not mentioned because the product developed is unprecedented and is in the process of patent application. Rumen fermentation variables were analyzed by the MIXED procedure of SAS statistical software version 9.0, according to delineation Latin square 4 x 4 in a split-plot, with treatments (inclusion levels of urea in pellets) allocated to plots and sampling times in subplots. The analysis of variance model for sources of variation included: sheep, stage, treatment time, the time x treatment interaction, as well as residue. Comparisons of means were performed by the LSMEANS procedure ($\alpha = 0.05$) statistical package SAS version 9.0. The molar concentration of acetate and total VFA did not differ in the type of treatment, time of collection or time x treatment interaction. The molar concentration of propionate did not differ with respect to treatment, or had time x treatment interaction. However, the concentration of the acid was lower 24 hours after the morning supply of the diet. The molar concentrations of butyrate differ between treatments, but there was no effect of collection time, nor the time x treatment interaction. The values of the acetate: propionate ratio differed with respect to time of collection and treatment, but there was no interaction between time x treatment. The minimum and maximum values observed for ruminal pH were 6.3 and 7.2, and the observed changes were not significant for the effect of treatment, collection time and time x treatment interaction. The values obtained for all parameters remained within the normal range for sheep.

Key words: Alternative food, non-protein nitrogen, ruminants

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