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ZOOTEC 28º CONGRESSO BRASILEIRO DE ZOOTECNIA

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

CONCENTRATIONS OF IN VITRO VOLATILE FATTY ACIDS OF DIETS WITH CASHEW NUT SHELL LIQUID AND CHITOSAN AS ADDITIVES FOR RUMINANTS

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Chitosan is a natural, amino polysaccharide product derived from the chitin deacetylation process. Cashew nut shell liquid (CNSL) extracted from the cashew nut shell (*Anacardium occidentale* L.), is considered a natural source of phenolic lipids. The antimicrobial activity of chitosan and cashew liquid has been observed against bacteria and fungi. Concentrations of short chain fatty acids of rumen liquid, in vitro, in diets complemented with chitosan (C), Cashew nut shell liquid (CNSL) and association between chitosan and cashew nut shell liquid (CNSLC) were evaluated. The experimental design was a completely randomized design and the additives were added in the proportions: 500 mg kg DM^{-1} of CNSL; 500 mg kg DM^{-1} of chitosan; 200 mg kg DM^{-1} of monensin (positive control) and association between CNSLC (500 + 500 mg kg DM^{-1}) combined at the 0, 35, 50, 65 and 80% ratios of concentrate. The results of volatile fatty acids (VFA) were submitted to PROC MIXED, considering a repeated measurement effect by the REPEATED command, indicating the combination of additive effects and concentrated voluminous ratio (id) as subject (via the SUBJECT = id command) and defining the covariance structure between repeated measures (in this case, we chose unstructured via command TYPE = UN). Interaction between the proportions of concentrates and the inclusion of the additives ($P < 0.05$) on the CFAs studied was verified. It verified influence between the concentrate: Voluminous ratio on acetic acid, proprionic and butyric concentrations. The alteration of the C2: C3 concentration observed with the monensin supply, higher than that obtained with the other diets, favored the population of fibrolytic bacteria, which mainly produce acetate, releasing hydrogen, on the other hand, the natural additives (CNSL, C and CNSLC) provided an increase of the proprionate and reduction of the C2: C3 ratio. The inclusion of the chitosan additive and / or CNSL increases the production of propionic acid and reduces the C2: C3 ratio, resulting in increased energy production for the animal.

Keywords: concentrate level, cattle, acetate, butyrate, chitosan

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