

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## TOTAL IN VITRO GAS PRODUCTION OF DIETS WITH CASHEW NUT SHELL LIQUID AND CHITOSAN AS ADDITIVES FOR RUMINANTS

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The kinetics of ruminal fermentation were evaluated by in vitro gas production of bovine ruminal fluid supplemented with cashew nut shell liquid (CNSL), chitosan (C), and association between chitosan and cashew nut shell liquid (CNSLC). Two cattle, castrated, cannulated males in the rumen with an average weight of 350 kg were distributed in a completely randomized design. The diets were formulated using proportions of 0, 35, 50, 65 and 80% of concentrate. The additives were added in the proportions: 500 mg kg DM<sup>-1</sup> LCCC; 500 mg kg DM<sup>-1</sup> of chitosan; 200 mg kg DM<sup>-1</sup> of monensin (positive control) and association between CNSLC (500 + 500 mg kg DM<sup>-1</sup>, respectively). For analysis of gas production, 8 glass vials with a capacity of 250 mL were used. 1.0 grams of each bulky: concentrate ratio with its respective additives were added in duplicate of each treatment. In each flask, 100 mL of the buffer solution, 25 mL of CO<sub>2</sub> purged ruminal inoculum were added. The flasks remained at temperature at 39 ° C with constant stirring. For each incubation, two flasks were used as blank, containing only ruminal inoculum and buffer solution, as the objective of adjusting the pressure values. The gas pressure produced was recorded by pressure sensors located on the bottle caps. The acquired information was transferred to a computer, at 5-minute intervals, totaling 288 readings, during 24 hours of incubation. The adjustment of the gas production curves and the estimation of the parameters of biological interest and the adjustment of the gas production curves were performed using the iterative process of Gauss-Newton using the procedure for non-linear models. There was a quadratic effect for fraction A (mL gas<sup>-1</sup>) and its degradation rate B (rate of degradation of the soluble fraction A), and for degradation of the fraction of slow degradation (fraction D) with the increase of the concentrate in the diet. The soluble fractions did not change with inclusion of the additives. The increase in the volume in the diet provided a higher production of slow fraction gas (parameter D ml gas<sup>-1</sup>). The liquid of the cashew nut cashew associated with chitosan does not affect the kinetics of ruminal fermentation, however, the increase of the concentrate results in a higher gas production of the fast fraction, on the contrary, the increase of the roughage increases the production of gas of the slow fraction.

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