

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

IN VITRO KINETIC PARAMETERS OF DIGESTION OF THE MARANDU GRASS ASSOCIATED TO TANNINS DOSES

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Natural additives such as tannins have been used in ruminants diets as an alternative to ionophore antibiotics and have the potential to modulate rumen fermentation, reducing losses and increasing nutrient utilization efficiency by the animal. Thus, this study aimed to evaluate the *in vitro* kinetic parameters of the digestion of low - protein crude forage supplements with low or high rumen degradable protein (RDP) and tannin doses. The study was carried out by in consecutive weeks by a completely randomized design with 2x4 factorial arrangement. The tannins doses were: 0, 0.5, 1.0 and 1.5% on dry matter basis of the incubated diet, which were associated to supplements with RDP levels which were designated as low (LRDP) and high (HRDP). The forage used in this study was *Brachiaria brizantha* cv. Marandu which has been collected in dry season. Two incubations were performed in sixteen automatic Ankom flasks in which was weighed 1 g of sample diets (forage:supplement ratio of 75.6:24.4). Into every flask 80 mL of buffer solution and 20 mL of rumen fluid were added, in which the ruminal liquid was from two rumen fitted cattle kept on grazing conditions. The supplements were formulated with corn meal, soybean meal, DDG and urea in different proportions in order to meet the established RDP levels. All the incubation steps associated to medium preparing and ruminal fluid manipulation were carried out using anaerobic techniques with CO₂ flushing and the incubation was run at 39°C in a laboratory oven. The gas production reads were obtained by an automatic system in which the gas measurements were recorded every 10 minutes during the incubation. There was interaction between the RDP and tannin doses on the total gas production (TGP), in which HRDP presented higher TGP (111.05 mL) when 0.5 of the tannins were added to the diet. There was a quadratic effect ($P < 0.05$) of the tannins levels on the TGP for HRDP. HRDP supplementation ($P < 0.05$) resulted in a higher rate of gas production compared to LRDP ($6.14 \times 5.43\% \text{ h}^{-1}$). The treatments did not influence the lag time ($P > 0.05$), with an average of 2.49 hours being observed. When inclusion of a 0.5% tannin dose in the diet was used, there was probably a better synchronism in the nutrient release, promoting greater microbial growth and consequently greater digestion and gas production, which seems to be a better tannins dose recommended for conditions like used in this study.

Keywords: Active tannin, gas production, rumen degraded protein, *Brachiaria brizantha*

Promoção e Realização:



Apoio Institucional:



Organização:

