

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

SOURCES OF NON-PROTEIN NITROGEN STEERS FEEDING AT PASTURE: PROPORTION OF SHORT-CHAIN FATTY ACIDS

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Urea is a source of non-protein nitrogen (NPN) of rapid ruminal degradation, with ammonia release into the bacteria. The aim of this study was to evaluate non-protein nitrogen sources in supplements for grazing steers. Three crossbred steers with average weight of 350 kg with ruminal cannula were used, kept in individual paddocks of *U. brizantha* and distributed in 3 x 3 Latin square repeated in time. The animals were supplemented at 0.3% of body weight, of a supplement (38% CP), containing corn, soybean meal and minerals, changing the source of non-protein nitrogen as follows: CU (concentrate + conventional urea) and PU (concentrated + extruded urea, REVESTIC 230 ®, Biomart); as control treatment, mineral supplementation (MS) was adopted. All animals received 20 g of fibrolytic enzyme (Fibrozyme™, Alltech) supplied daily in the rumen. For the evaluation of molar concentrations and the proportion of short chain fatty acids in the ruminal fluid, samples were collected on the 14th day of each experimental period immediately before to supplementation and 2, 4, 6 and 8 hours after supplementation. The short chain fatty acid ratio (SCFA) data were submitted to analysis of variance using the MIXED procedure of SAS 9.2. Analyzed as time-repeated measures. The differences between the treatments were tested for the orthogonal contrasts, being C1 (MS vs CU + PU) and C2 (CU vs PU) adopting 5% of probability. The molar concentration and acetate ratio increased from 64.47 mmol L⁻¹ to 67.65 mmol L⁻¹, with the addition of NPN sources (C2 P = 0.041); The increase in propionate molar concentration from 12.39 mmol L⁻¹ to 13.67 mmol L⁻¹ occurred with the addition of NPN sources (C2 P = 0.034). The total values of fatty acids presented significance for the contrasts evaluated (C2 P = 0.024), where mineral supplementation presented values of 87.31 mmol L⁻¹, while NPN sources had a mean of 88.85 mmol L⁻¹ (CU = 86.33 mmol L⁻¹ and PU = 91.36 mmol L⁻¹). The source of non-protein nitrogen in the diet of grazing steers positively affected the increase of the concentration of rumen acetate and propionate and the total concentration of short chain fatty acids.

Keywords: protected urea, ruminal fermentation, supplementation

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