SOURCES OF NON-PROTEIN NITROGEN IN STEERS AT PASTURE: pH AND RUMINAL AMMONIA

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Urea is normally used for cattle to pasture, different processes can benefit the nitrogen use in the diet of these animals. The aim of this study was to evaluate non-protein nitrogen (NPN) 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); and mineral supplementation as control treatment, (MS) was adopted. All animals received 20 g of fibrolytic enzyme (Fibrozyme ™, Alltech) supplied daily in the rumen. For the evaluation of the pH and the concentration of ammoniacal nitrogen in the ruminal fluid (ANR), the samples were collected manually on the 14th day of each experimental period, immediately before to supplementation (0) and 2, 4, 6 and 8 hours after the supply of the supplement. Ruminal pH and ANR data were submitted to analysis of variance using the MIXED procedure of SAS 9.2. Analyzed as repeated measures in time (split splot) adopting as fixed effect the nitrogen sources. The averages evaluated through orthogonal contrasts, being C1 (MS vs CU + PU) and C2 (CU vs PU), at 5% probability. The ruminal Ph had a reduction from 6.54 to 6.44, with the addition of NPN sources (C1, P = 0.001); however, when comparing CU x PU, the values did not differ among themselves (C2, P = 0.451), remaining above the limits of 6.2 to potentiate fiber degradability. The ANR values presented significance for the contrasts evaluated (C1, P = 0.001, C2, P = 0.002), where mineral supplementation presented values of 6.04 mg dL^{-1}, while NPN sources had a mean of 16.8 mg dL^{-1} (CU = 20.10 mg dL^{-1} and PU = 13.50 mg dL^{-1}). The addition of NPN sources reduced ruminal pH and the addition of protected urea lower ANR values when compared to CU.

Keywords: protein supplementation, protected urea, ruminal fermentation, ruminal parameters