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Área do trabalho: Nutrição e Produção de Não-Ruminantes

Protein concentration and pH of milk from donkey females of the Nordestino ecotype

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Donkey milk presents nutritional and therapeutic properties, being used in human nutrition for treatment of respiratory, joint, and digestive diseases, especially in cases of cow milk protein allergy. Compared to other production animals, donkey milk is the closest to human milk in terms of nutritional content, particularly regarding lactose and protein levels. In this context, the objective was to analyze the protein concentrations and pH of milk from primiparous and multiparous Nordestino ecotype donkeys during the initial 180 days of lactation. Fourteen female donkeys, aged between 3 and 7 years with a mean body weight of 185 ± 30 kg, were used in a completely randomized experimental design in a split-plot scheme, with plots consisting of groups of primiparous and multiparous females, and subplots represented by evaluation periods: 1, 3, 15, 30, 60, 90, 120, 150, and 180 days of lactation. The animals remained in native pasture area throughout the gestational period, with water and mineral salt *ad libitum*. At 11 months of gestation, the females were transferred to maternity paddocks and, after giving birth, remained in an area of approximately 0.5 hectares without vegetation cover. From the 11th month of gestation, the daily dry matter intake was 2.5% of the body weight, with 70% forage and 30% specific commercial concentrate for breeding equids. The animals received exclusively Tifton 85 hay (*Cynodon* spp.) as forage. The results of milk pH and protein content were subjected to variance analysis, with means compared by by Tukey's test ($P<0.05$). There was no difference ($P>0.05$) between the groups of primiparous and multiparous in milk protein content, with a mean of 2.30 g.100 mL^{-1}. In both experimental groups, a progressive reduction ($P<0.001$) in milk protein content was observed, decreasing from 4.44 g.100 mL^{-1} on the first day of lactation to 1.55 g.100 mL^{-1} on day 180. Similarly, there was no difference ($P>0.05$) between primiparous and multiparous regarding milk pH. However, concerning the lactation period, variations in pH were observed, ranging from 6.55 to 6.51 in colostrum (1st day) and transition milk (3rd day), respectively, while pH values of mature milk (15th to 180th day) ranged from 7.03 to 7.16. Due to colostrum having a higher concentration of nitrogenous components (immunoglobulins), it is possible to relate the higher protein levels in the first three days of lactation to the pH values below 7.0 recorded during the same period. Similarly, the progressive reduction in milk protein concentration contributed to the increase in pH from day 15 to day 180 of lactation. It is concluded that the number of births does not influence the protein concentrations and pH of milk from Nordestino ecotype donkeys during the first six months of lactation. However, these concentrations are influenced by the lactation period.

Keywords: Donkey, Colostrum, Lactation, Pregnancy.

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