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Work field: Nutrition and production of ruminants

Title: Quality analysis of milk from cattle submitted to *brachiaria* hybrid pastures in rainfed conditions

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The scarcity and low nutritional value of forage during drought are major challenges for livestock farming in semi-arid regions. In the Brazilian Northeast, the use of technologies to cultivate adapted species is crucial to boost milk production. Thus, the objective is to evaluate the chemical composition of milk from cattle in pastures with *Brachiaria* hybrids under rainfed conditions in the rural region of Pernambuco. The experiment was conducted at the Paulista farm, in partnership with the Universidade Federal do Agreste de Pernambuco (UFAPPE) and Papalotla Seeds Company. The pasture consisted of two hectares of *Brachiaria brizantha* cv. Marandu and two hectares of hybrid GP 3025 (Camello®), with 16 paddocks for each type of forage. Six crossbreed Holstein x Zebu cows were used, with an average milk production of up to 20 kg/day, after peak lactation and with an average body weight of 480 kg. Milk collection was made through mechanical milking, collecting 150 mL from each animal in sterile tubes and transported in thermal boxes containing ice to the UFAPPE Milk and Derivatives Laboratory. The analyses included pH, titratable acidity, cryoscopy, density at 15°C, stability, protein, lactose, fat, mineral salts, total dry extract, and defatted dry extract, using the Ultrasonic Milk Analyzer equipment. Data were analyzed using a completely randomized design and analysis of variance was performed with the PROC GLM procedure, means were compared using the Tukey test at a significance level of $P < 0.05$. There was no statistical difference between the chemical composition variables between the forages ($P > 0.05$). The results indicated that the pH of the milk of the two forage species analyzed was between 6.6 and 6.8, by the standards of Normative Instruction N°76. The titratable acidity, which should be between 14 and 18° Dornic degrees, was also within the acceptable range. The fat content of the milk varied from 3.2 to 3.3%, meeting the minimum requirement of 3%. The components of the analyzed milk were within established standards: fat (3.2 to 3.3%), protein (3.2%), lactose (4.8 to 4.9%), and mineral salts (0.67 to 0.69%). Milk density, important for detecting fraud, varied between 1.028 and 1.034 g/mL at 15°C, with all samples within the required parameters (1.032 g/mL). The total dry extract, which indicates the yield of milk derivatives, ranged from 11.78 to 11.93, within legal standards. The defatted dry extract, which excludes fat and includes proteins, lactose, and mineral salts, ranged from 9.09 to 9.15, exceeding the minimum required of 8.4g/100g. Cryoscopy, which checks the purity of the milk, ranged from -0.565 to -0.575, also within the tolerance limits of 0.530°H and -0.555°H. The quality of the analyzed milk meets legal standards, highlighting the GP3025 hybrid as a promising technological innovation for milk production in the Agreste of Pernambuco.

Keywords: dairy cattle farming, forage farming, ruminant nutrition, animal production.

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