

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

CAN NON-FIBER CARBOHYDRATE SOURCE AND BUFFERING/ALKALINIZING CHANGE THE LACTATING PERFORMANCE AND MILK STABILITY OF DAIRY COWS?

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The hypothesis of present study was: partial replacement of ground corn (GC) with citrus pulp (CP) and inclusion of buffering/alkalinizing (BA) in the diets of lactating cows do not change the lactating performance but reduce the milk concentration of ionic calcium (iCa), which increases the milk stability at ethanol test and heating at 140°C (Heat Coagulation Time – HCT). We aimed to evaluate the effect of CP and BA inclusion in the diet of lactating cows on digestive metabolism, milk yield and milk stability. Sixteen Holstein cows (milk yield = 28 L d⁻¹ ± 4,8 and days in milk = 130 ± 81; mean ± SD) were distributed in a Latin Square design with four contemporaneous squares, four periods of 21 d (14 d for adaptation and 7 d for sampling) and four treatments in a factorial arrangement 2 × 2. Factor 1 was the partial replacement of GC with CP (33% of replacement). Factor 2 was the inclusion of BA (0.7% of Na bicarbonate and 0.24% Mg Oxide; DM basis); in diets with 40:60 of forage:concentrate ratio (DM basis). When GC was partial replaced with CP, cows reduced DMI by 1.36 kg d⁻¹ (P = 0.001), increased DM and NDF digestibility (P = 0.012 and 0,013, respectively) but did not change the milk yield (P>0.05), which resulted in a higher productive efficiency of cows fed CP (P = 0.001). The partial replacement of GC with CP reduced the casein (P = 0.002) and tended (P = 0.067) to reduce the HCT. There was no isolated effect of GC replacement or BA addition or their interaction on iCa and milk stability at the ethanol test. In diets without inclusion of CP, cows increased the water intake time by 29% (P = 0.008) and rumination time by 6.6 min kg⁻¹ of DM ingested when BA was included in the diet (P = 0.039), compared to cows not fed BA. In addition, BA inclusion increased milk fat content (P = 0.016) and urinary pH (P<0.001), which suggested that BA inclusion contributed to reduce the ruminal and blood acidification. However, milk stability at ethanol test not changed in response to treatments and HCT tended to be reduced when GC was replaced with CP, probably because cows fed CP reduced the nutrient intake and their availability to the mammary gland for milk production.

Keywords: acidosis, ionic calcium, feeding behavior, LINA, milk yield

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