

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## Effect of food management on ruminal consumption and development: an environmentally sustainable alternative

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The productive life of the animal is a reflection of a feeding management in the breeding phase. At this stage, the provision of high levels of milk reduces the consumption of solid foods interfering with ruminal development. From this point, food alternatives appears: milk restriction and methionine supplementation. Feed restriction may exhibit compensatory gain with increased growth rate and feed efficiency. Methionine supplementation has environmental importance, reduces N or NH<sub>3</sub> losses, it reduces gas emissions and soil or water contamination without negative impacts on animal performance. The objective of this study was to evaluate the effect of milk restriction and supplementation with methionine hydroxyl analogue (HMTBA) on dry matter intake (CMS) and rumen histology of Dutch crossbred calves, aged between 1 and 15 days, with average weight of 36.8 kg, in 2 period of 21 days. The animals were distributed in ICD with 3 treatments, 7 replicates, being CONTROL: 6L milk/day in period 1 (1P) and 6L of milk/day in period 2 (2P); RES + HMTBA: 3L in 1P and 6L of milk/day in 2P with 4 g of HMTBA. 3L in 1P and 6L of milk/day in 2P with 4g of HMTBA; RES: 3L in the 1st P and 6L of milk/day in the 2nd P. Methionine supplementation was 4g/animal/day via HMTBA. Mintrex Zn™ supplied in the fractionated milk 2X per day (8 and 16h) in buckets. The amount of feed and hay provided and the leftovers for CMS estimation were recorded. The animals were slaughtered, and then it was collected fragments of the rumen in the dorsal region for histological procedures. Restriction of milk supplemented or not with HMTBA did not influence CMS (Conc. + Volume) Kg.day<sup>-1</sup>. In the 1st P the CMST (Conc. + Volume + Milk) were lower in calves submitted to milk restriction, mean intake MS.kg d<sup>-1</sup> of 0.607 vs 0.966 kg d<sup>-1</sup> was due to milk restriction. The thickness of epithelium (26.62 µm), keratin (13.34 µm), papilla density (192.33 cm<sup>2</sup> papillae), height (2.30 mm) and width of the ruminal papillae (0.82 mm) did not show statistical differences, it is attributed to the consumption of solid foods that were similar. Milk restriction and HMTBA supplementation did not increase solids consumption and did not influence ruminal development.

**Keywords:** hydroxy methionine analogue, keratin, rumen, reduces losses of N.

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