

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

LACTATION PERFORMANCE AND DIET DIGESTIBILITY OF DAIRY COWS FED FIBROLYTIC ENZYMES

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This experiment evaluated the effect of a fibrolytic enzyme preparation on lactation performance, feed efficiency, and diet digestibility of dairy cows. Twenty-eight Holstein cows (221 ± 83 days in lactation) were individually fed a standardization diet for 14 days and a treatment diet for 56 days, in a covariate adjusted randomized block design with repeated measures over time. Treatments were control (CTL) or a *Trichoderma reesei* derived fungal extract [VPT, 0.75 mL kg⁻¹ dry matter (DM). VistaPre-T, AB Vista]. Diets contained (% of DM): 48.3% corn silage, 3.9% oat hay, 8.6% whole cottonseeds, 20.6% ground corn, 15.8% soybean meal, 36.5% NDF, and 29.5% starch. Milk yield and intake were recorded daily, the total tract apparent digestibility of nutrients and ruminal fermentation profile were evaluated on week eight, and chewing and sorting behaviors on weeks four and eight. The digestibility of NDF was 47.6% of intake on VPT and 44.5% on CTL ($P = 0.44$) and starch digestibility was 93.1% and 94.0% ($P = 0.38$), respectively. The proportion of intact corn kernels excreted in feces was 6.2% of intake on VPT and 5.9% on CTL ($P = 0.47$). Fecal viscosity and composition did not differ ($P \geq 0.55$). The DM intake was 20.7 and 21.2 kg d⁻¹ ($P = 0.96$), milk yield was 26.3 and 26.4 kg d⁻¹ ($P = 0.44$), and the ratio of milk to DM intake was 1.34 and 1.33 ($P = 0.80$) on VPT and CTL, respectively. The VPT tended to increase milk fat concentration (3.52 vs 3.40%. $P = 0.07$) and increased milk protein concentration on weeks six ($P = 0.02$) and eight ($P = 0.04$) and total solids concentration (12.10 vs 11.94%. $P = 0.02$). The molar proportion of acetate tended to be increased ($P = 0.15$) and propionate tended to be reduced ($P = 0.11$) on VPT, inducing a trend for increased acetate to propionate ratio ($P = 0.10$). The VPT tended to increase plasma urea-N over time ($P = 0.06$) and increased milk urea-N on week three ($P = 0.05$), suggesting protease activity. Plasma glucose concentration did not differ ($P = 0.17$). Treatments had no effect on chewing and ingestion behaviors, the proportion of intake in periods of the day, and particle size, NDF, and starch sorting behaviors ($P \geq 0.20$). The supplementation of lactating cows with VPT had no effect on diet digestibility and feed efficiency, but increased milk solids concentration.

Keywords: feed efficiency, fiber, fungal extract, milk solids, sorting behavior

Acknowledgments: AB Vista Comércio e Alimentação Animal for partially funding the project, CNPq and Fapemig for the grants to the authors, and Grupo do Leite of UFLA for the help with animal care and data collection

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Apoio Institucional:

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