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Evaluation of intake variables from a diet with high inclusion of co-products from the ethanol industry consumed by Nellore cattle in the feedlot

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Understanding how diets with high proportions of co-products from ethanol production work allows us to improve their use. The study lasted 107 days (14 days of adaptation) and was carried out in the experimental feedlot of Embrapa Pecuária Sudeste, São Carlos, SP; whose four pens are equipped with Intergado® troughs (Contagem-MG, Brazil) for individual and daily control of diet intake by animals. Forty Nellore cattle, intact males, aged 18 ± 0.4 months, with initial live weight (BW) of 374 ± 37 kg, were distributed in a randomized block design. The blocking criterion was live weight (10 animals/pen; 20 animals/treatment). The animal ethics committee approval is CEUA 06/2023. The Canapec diet had sugarcane bagasse (13.50%), corn grain (52.77%), dry distillers grains with solubles (DDGS, 30.0%), peanut oil (0.66%), potassium chloride (0.51%), calcite (1.0%), urea (0.56%) and mineral mixture (1.0%). The Conventional diet had corn silage (25.50%), corn grain (32.74%), soybean hulls (35.00%) and soybean meal (4.75%), urea (1.00%) and mineral mixture (1.00%). Data were analyzed using PROC MIXED from SAS (SAS Institute Inc., SAS 9.4), considering the treatments as fixed effect and the blocks as random effect. Differences between means were considered significant when $P<0.05$. There was no significant difference in the number of animal visits to the trough, with an average value of 61 visits/day. Significant differences were observed for the DMI variables (10.89 and 9.84 kg animal^{-1} day^{-1}), consumption time (77.98 and 105.44 minutes) and intake rate (154.89 and 108.75 g minute^{-1}) for the Conventional and Canapec treatments, respectively. The dry matter intake was lower for Canapec, but consumption time was higher, resulting in a 30% lower intake rate. This can be attributed to its high DM content: 81% compared to 60% for the Conventional. In conclusion, the greater ingestion difficulty due to the high DM content of the Canapec diet may help explain the feedlot results and the use of WDGS instead of DDGS should be investigated.

Keywords: biofuels, rate of ingestion, coproducts, ethanol

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