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Evaluation of a diet with high inclusion of co-products from the ethanol industry on the performance of Nellore cattle in the feedlot

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Using high proportions of co-products from ethanol production plants for animal feed in feedlots is an important strategy to integrate these activities. Our objective was to compare a diet optimized for lower cost per kilogram with maximum inclusion of co-products from ethanol production (Canapec), with another formulated for the same performance with conventional ingredients (Conventional). 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 difference in the final average BW (560 and 573 kg; $P=0.2626$) and ADG (1.91 and 1.89 kg/head/day; $P=0.7932$) between the Canapec and Conventional treatments. However, differences were observed in DM intake (2.07% and 2.25% of BW; $P=0.001$) and feed efficiency (195 and 175 g of DM per kg of BW; $P=0.0039$) between the Canapec and Conventional treatments, respectively. In conclusion, the Canapec diet, containing 44% of dietary DM from ethanol co-products, favored animal performance by reducing DM intake and, consequently, increasing feed efficiency.

Keywords: biofuels, co-products, ethanol, feed efficiency

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