

Effects of different feed additives on biologic efficiency of feedlot finished cattle

Guilherme A. Sene, Juan F. M. Gómez, Juliana. Silva, Luísa E. P. Villa, Nathalia P. Dias, Guilherme M. Bueno, Rachel B. A. Vieira, Lauriston, B. Fernandes, André P. D'Aurea, Saulo L. Silva

Animal Science Department: College of Animal Science and Food Engineering.

University of Sao Paulo, Pirassununga, Sao Paulo, Brazil, 13635-900

*guilhermesene@usp.br

This study aimed to evaluate the effect of different food additives on performance, carcass gain and biological efficiency of feedlot Nellore. Forty-eight young bulls (373 ± 32 kg and 24 months) were divided in four treatments in a randomized block design according to the initial weight, containing 85% concentrate and 15% roughage. The treatments were monensin ($24,4 \text{ mg.kg}^{-1}$) + virginiamycin ($19,5 \text{ mg.kg}^{-1}$; MV), monensin ($24,4 \text{ mg.kg}^{-1}$) + organic additive ($584,8 \text{ mg.kg}^{-1}$; MOA), organic additive ($584,8 \text{ mg.kg}^{-1}$; OA) and organic additive ($584,8 \text{ mg.kg}^{-1}$) + compound of enzyme amylolytic ($974,9 \text{ mg.kg}^{-1}$; OAE). The commercial product used as source of organic additive was Fator-P® (Manufaturação de Produtos para Alimentação Animal Premix Ltda, Patrocinio Paulista, SP, Brazil) and of amylolytic enzyme was Amaize® (Alltech do Brasil Agroindustrial Ltda, Araucária, PR, Brazil). Animals were housed in 4 collective pens equipped with electronic gates (Calan Gates) and adapted to diets and facilities for 21 days, and fed for 88 days. Feeding was offered twice a day (7 and 16h) and orts collected every two days. The animals were weighed every 28 days for live weight (LW) determinations. At the end of feeding period the animals were slaughtered in commercial abattoir, according to humanitarian procedures. During the slaughter process the hot carcass weight (HCW) was taken. The average daily carcass gain (ACDG) was calculated as the difference between the HCW and initial carcass weight (initial LW x 0.52 – 52% of dressing percentage) divided by the number of days on feed. Using dry matter intake (DMI) was calculated the biological efficiency (BE), by dividing the DMI by ACDG. There was no effect of treatments on evaluated traits, The averages values for treatments MV, MOA, OA and OAE were: final LW ($495.2 \times 494.6 \times 492.8 \times 485.7$ kg, respectively; $P = 0.9588$), HCW ($297.8 \times 296.0 \times 296.4 \times 290.0$ kg, respectively; $P = 0.9256$), dressing percentage ($60.0 \times 59.8 \times 60.3 \times 59.8\%$, respectively; $P = 0.9075$), ACDG ($1.171 \times 1.123 \times 1.185 \times 1.104$ kg.d^{-1} , respectively; $P = 0.7851$), DMI ($9.8 \times 9.8 \times 10.7 \times 10.1$ kg.d^{-1} , respectively; $P = 0.5115$), BE ($120.0 \times 113.9 \times 112.1 \times 109.9$ g.kg^{-1} , respectively; $P = 0.5341$). The use of different additives did not affect the biological efficiency and carcass gain in feedlot cattle, showing the possibility of alternative additives to replace antibiotics additives, thus meeting the demand of non-use of such additives. However, further studies are needed to evaluate the use of these additives in different production systems.

Keywords: biological efficiency, enzyme amylolytic, organic additive