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Enteric Methane Emissions from crossbred cattle from different breeds of bulls in confinement

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Introduction

At present there is a need to increase the productivity of systems due to an increasing demand for food and a shrinking area available for agricultural production. One solution is confinement of livestock and the use of genetic groups that are more efficient at transforming feed into product (meat). Feed efficiency may be related to enteric methane emissions, which generate energetic losses when produced by the animal. The objective of this study was to measure enteric methane emissions from crossbred cattle bred from different breeds of bulls.

Material and Methods

The study used 44 crossbred animals, in confinement, bred from females of the Nelore breed and ½ Angus + ½ Nelore and ½ Senepol + ½ Nelore crosses, produced in terminal crosses with three breeds of bulls: 17 Angus offspring, 15 Canchim offspring (artificial breed 5/8 Charolais) and 12 Charolais offsping, raised on pasture and finished in confinement. A feedlot was provided, with automated troughs (GrowSafe system) that measure daily dry matter intake. The diet consisted of 40% concentrate and 60% roughage, with 71% TDN, 13.1% CP and 51.8% DM. Methane emissions were measured using the GreenFeed system. Data was analyzed using the MIXED proce-

dure of SAS and averages were compared using Tukey's test, with significant differences at $p < 0.05$.

Results and Conclusions

The Canchim breed presented lower values for average daily gain (ADG) when compared with the Angus breed. However, statistical differences were not observed for the variables related to enteric methane emissions. It may be concluded that that there were no differences between the breeds of bulls used for crossbreeding in terms of enteric methane emissions, despite the differences in consumption and weight gain.

Table 1. Weight gain and methane emission variables for different breeds of bulls used in the terminal crossbreeding.

	Bull Breed			
	Canchim	**Angus**	**Charolesa**	***P***
ADG (kg/d)	1.638±0.06[b]	2.033±0.06[a]	1.882±0.07[ab]	*<.0001*
CH_4 (g/d)	152.4±6.39	171.6±6.00	170.4±7.14	*0.0701*
CH_4ADG (g CH_4/kg ADG)	94.33±4.14	84.97±3.89	92.03±4.63	*0.2404*

a, b Different letters in the same row differ ($p < 0.05$) according to the Tukey test. ADG: average dairy gain, CH4: methane.

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