



## Performance of crossbred cattle in a Crop-Livestock Integration System

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### Introduction

The Brazilian livestock has sought greater productivity in a sustainable manner, through modern systems that reduce the financial and productive risks, such as the crop-livestock integration system (CLI).

### Material and Methods

The experiment was conducted at Embrapa Maize and Sorghum, located in Lagoas-MG, Brazil (19°28'S, 44°15'W and 732 m altitude), from July 2013 to May 2014. The CLI system was implemented in a 24-ha area with rotation and intercropping of corn, soybean, sorghum, and pasture (*Panicum maximum* cv. Mombaça). The calves weaned at seven months of age belonging to two breed groups — 21 ½ Angus × ½ Nellore (AN) and 10 ½ Charolais × ¼ Angus × ¼ Nellore (CAN) — were divided in a completely randomized design. Animals were fed mineral and protein supplementation *ad libitum* during the rainy and dry seasons, respectively. The weight-gain means were compared by Tukey's test at 5% probability.

### Results and Conclusions

The animal productivity was 858 kg live weight per hectare (ha), with an average stocking rate of 3 AU/ha. The forage allowance varied from 5.7 to 23.13 kg DM/100 kg live weight. The forage crude protein contents ranged from 8.7 and 17%. Breed group CAN obtained a higher average daily gain (ADG) and consequently higher final weight (Table 1). The inferior performance shown by CAN animals is explained by the fact that they had ¾ taurine blood, which has lower adaptability to tropical conditions. Cruz et al. (2009) also found a lower ADG for crossbred animals of continental origin (Simmental × Nellore) compared with other crosses. Another explanation for the inferior performance of CAN animals in this study may be the genetic effect of the Charolais bull used with the Angus × Nellore females to originate the CAN crossbreed. The bull had an expected progeny difference (EPD) for low weight at birth; however, its tested offspring (CAN) showed also low yearling weight.

Table 1. Average daily gain (ADG), average initial weight (WI) and average final weight (WF) of animals ½ Angus × ½ Nellore (AN) and ½ Charolais × ¼ Angus × ¼ Nellore (CAN) in CLI system

Variables	AN	CAN	CV(%)
WI (kg)	157.20 a	151.93 a	10.68
WF (kg)	381.73 a	309.46 b	7.09
ADG (kg/animal/day)	0.7332 a	0.5236 b	9.98

Different letters in the same row differ by Tukey test at 5%, CV: coefficient of variation

Animals from breed group AN showed superior performance as compared with those from the CAN breed group in the CLI system.

### References

Cruz, G. M.; et al. Desempenho de bezerros da raça Nelore e cruzados desmamados recebendo concentrado em pastagem adubada de *Cynodon dactylon* cv. Coastcross. R. Bras. Zootec., v.38, n.1, p.139-148, 2009.