

Performance of crossbred young bulls fed rations with sugarcane silage treated with *Lactobacillus buchneri*

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Introduction The ensiling of sugarcane can be an option to overcome operational difficulties of daily harvest and to provide increased efficiency of agronomic management practices (Siqueira et al., 2012). However, the alcoholic fermentation can cause reduction in sugarcane quality. In recent years many studies have examined the effect of microbial inoculation (*Lactobacillus buchneri*) on sugarcane quality, but few evaluated if this roughage can be effectively used in cattle fattening diets. A trial was conducted to evaluate the effect of sugarcane silage inoculated with two dosages of heterolactic bacteria *Lactobacillus buchneri* on young beef bulls performance, in comparison with other traditional forages.

Materials and Methods Thirty-five animals (mean initial weight 463 kg) were allotted to individual pens, in a completely randomized design, with five treatments characterized by rations formulated with one of those forages: sorghum silage, fresh sugarcane, sugarcane silage without additive, sugarcane silage inoculated with low dose of *Lactobacillus buchneri* (5×10^4 cfu/g fresh forage) and sugarcane silage inoculated with high dose of *Lactobacillus buchneri* (1×10^5 cfu/g fresh forage). The ensiling of sugarcane was performed in stack silos and the forage was stored during 30 days before being offered to the animals. The diets were formulated to be isonitrogen (14% CP) and isoenergetic (70% TDN). The ingredients of concentrate were ground corn, soybean meal, minerals, urea and limestone. The total experimental period was 84 days, with three periods of 28 days (21 days of adaptation and 7 days of sampling). Animals were fed twice a day, approximately at 9h and 16 h. The silage and the concentrate, referring to each pen, were weighed separately in an electronic scale. Refusals were quantified daily for adjustment of next day feeding, to allow *ad libitum* consumption of rations (10% refusals). Animals were weighed in days 0, 28, 56 and 84, after 12 hours of fasting (solid feed), for analysis of body weight gain. Data relative to animal performance were analyzed using the GLM procedure of SAS (SAS Institute, 2001).

Results and Discussion Dry matter intake (% BW) was greater ($P < 0.05$) for animals fed rations containing sorghum silage. On the other hand, no difference ($P > 0.05$) was observed for dry matter intake in kg per day. Daily weight gain was significantly higher ($P < 0.05$) for animals fed sorghum silage in relation to those fed sugarcane silage and inoculated sugarcane silages, but did not differ ($P > 0.05$) from animals that consumed fresh sugarcane (Table 1). The feed conversion ratio was not significantly affected ($P > 0.05$) by treatments, but the values observed can be considered low, especially for animals consuming sugarcane silages (Table 1). Pedroso et al. (2011) evaluated the performance of young bulls fed total rations prepared with sugarcane silages treated or untreated with *Lactobacillus buchneri* (5.0×10^4 cfu/g). They observed that rations did not affect neither body weight gain nor dry matter intake, but feed conversion was better for animals that received sugarcane silage untreated in relation to those fed inoculated silage. Roman et al. (2011) evaluated the performance of beef cattle in feedlots fed diets containing whole-crop maize silage or sugarcane silage inoculated with *Lactobacillus buchneri* (5.0×10^4 cfu/g). The authors did not observe effect of the silages on average daily gain (1.348 kg/animal/day), but the

diets with whole-crop maize silage promoted greater dry matter intake (10.5 kg and 2.4% BW) in relation to diets with sugarcane silage (10.1 kg and 2.35 BW). Feed conversion was not affected by the silage source too. The performance of dairy cows fed sugarcane silages treated with additives compared to cows fed fresh forage was evaluated by Pedroso et al. (2010). They observed that cows fed rations with silages treated with *Lactobacillus buchneri* (5×10^4 cfu/g) showed lower dry matter intake (18.5 vs 21.4 kg/day) and lower milk production in comparison to those fed ration with fresh sugarcane.

Table 1 Performance of beef bulls fed rations containing sugarcane silages.

Item	Treatment ¹					CV
	SS	FSC	SCS	ISCS _l	ISCS _h	
Dry matter intake, kg/day	10.89 ^a	9.26 ^a	8.87 ^a	8.70 ^a	9.06 ^a	15.74
Dry matter intake, % BW	2,15 ^a	1,83 ^b	1,78 ^b	1,73 ^b	1,83 ^b	8,88
Daily gain, kg/day	1.27 ^a	1.06 ^{ab}	0.85 ^b	0.88 ^b	0.77 ^b	24.39
Feed conversion (kg DM/kg BW)	8.84 ^a	9.18 ^a	10.62 ^a	10.88 ^a	11.79 ^a	23.81

^{a-b} Means within a row with different superscripts differ ($P < 0.05$).

¹Treatments: SS = sorghum silage; FSC = fresh sugarcane; SCS = sugarcane silage without additive; ISCS_l = sugarcane silage inoculated with low dose of *L. buchneri* (5×10^4 CFU/g); ISCS_h = sugarcane silage inoculated with high dose of *L. buchneri* (1×10^5 CFU/g).

Conclusions The use of sugarcane silage in diets for finishing beef cattle is an alternative to fresh sugarcane, but the addition of microbial inoculant containing *Lactobacillus buchneri* was not effective to improving the animal performance of animal fed sugarcane silages.

References

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