

Enteric methane emission of Nellore cattle in extensive grazing or integrated systems

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Introduction

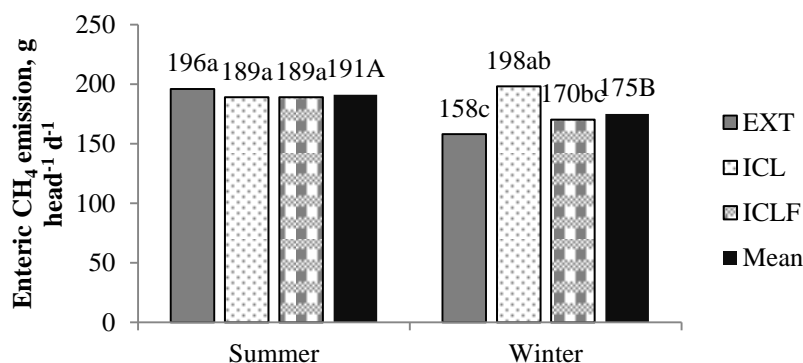
Brazilian beef cattle production is primarily based in grazing systems which in general present low productivity as a result of extensive monoculture pastures. Integrated systems come up as alternatives to overcome this scenario which in turn may have impacts on agricultural greenhouse gas emission. The aim was to evaluate the enteric methane emission of beef cattle grazing extensive pastures (EXT), integrated crop-livestock (ICL) and crop-livestock-forest systems (ICLF) in two seasons.

Material and Methods

The experiment was carried out at Embrapa Beef Cattle Research Center, in Campo Grande, MS, Brazil (20°24' S, 54°42' W, 560 m asl) in 2014. Treatments included: EXT – *Brachiaria decumbens*, established in 1992/1993, ICL – 3 years *Brachiaria brizantha* cv. BRS Piatã, following no-till soybean crop and ICLF - 3 years *Brachiaria brizantha* cv. BRS Piatã, following no-till soybean crop, in an area with 227 trees/ha, *Eucalyptus urophylla* x *E. grandis* planted in 2009. Twelve Nellore heifers (471±8 kg live weight, 3 years old) were randomly allotted to one of six paddocks (1 to 1.5 ha), two paddocks per treatment and had the enteric methane measured throughout two seasons (February 2014, Summer and August 2014, Winter), using the SF6 tracer gas technique, according to Primavesi et al. (2004). Season and treatment effects were analyzed using a mixed model with repeated measures and means were compared using Tukey-Kramer adjusted test (p<0.05).

Results and Conclusions

Fig. 1. Least square means for enteric methane (CH₄) emissions of Nellore heifers in different grazing systems and seasons (significant treatment x season effect, p<0.05).



Daily enteric methane emissions by beef cattle in grazing systems are greater in the summer than in the winter and differences between monoculture extensive pastures and integrated systems are pronounced only in the dry season.

References cited

Primavesi et al. 2004. 76p. Embrapa Pecuária Sudeste, Documentos, 39.