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Evaluation of native grass (*Echinolaena inflexa*) by chemical composition and ruminal fermentation kinetics

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The aim of this study was to evaluate the viability of a native grass *Echinolaena inflexa* for ruminant production. The experiment was conducted in the city of São João del-Rei (Latitude: 21 ° 05 '11 "S, Longitude: 044 ° 13' 33" W and altitude of 950 m), Minas Gerais state, Brazil. This region belongs to the transition zone of the Cerrado - Atlantic Forest, and the climate classified as tropical of altitude which had pastures of exotic (*Brachiaria brizantha* cv. Marandu) and also native grass (*Echinolaena inflexa*). The soil was classified as acidic, with low levels of phosphorus, potassium, organic matter and the soil texture has high proportion of sand. Grazing exclusion cages were randomly allocated being 8 cages (replicates) for each grass. Initially, a uniformization cutting was done in the areas simulating the animal harvest. The *Brachiaria brizantha* cv. Marandu (BB) was cut at 20 cm and *Echinolaena inflexa* (EI) at 5 cm above to the soil level. After the regrowth period, the forage harvest were performed according to the grazing height of 80 cm and 40 cm for BB and EI. Samples were collected throughout the year. Three cuttings were done for BB (two in the rainy season and one in the dry season) and two for EI (one in the rainy season and one in the dry season). The material was chemically evaluated (crude protein - CP, neutral detergent fiber - NDF, acid detergent fiber - ADF) and also fermented to measure the *in vitro* DM digestibility (IVDMD) at 6, 12, 48 and 96 hours using the semi-automatic *in vitro* gas production technique. A completely randomized design was applied and a multiple comparisons of means were performed using the Tukey test. The BB had higher DM production (971.9 kg DM/ha in the rainy season and 2444.8 kg DM / ha in the dry season) compared to EI (809.8 kg DM/ha in the rainy season and 939.3 kg DM/ha in the dry season). The EI had higher CP content (75.5 g kg⁻¹ DM in the rainy season and 73.3 g kg⁻¹ DM in the dry season) when compared to BB (60.3 g kg⁻¹ DM in the rainy season and 33.7 g kg⁻¹ DM in the dry season). For fiber contents, no changes were verified (P> 0.05) and the BB presented lower values of these constituents (NDF, 615.7 g kg⁻¹ DM in the rainy season and 613.3 g kg⁻¹ DM in the dry period; ADF, 260.5 g kg⁻¹ DM in the rainy season and 269.3 g kg⁻¹ DM in the dry season), when compared to IE (NDF, 693.3 g kg⁻¹ DM in the rainy season and 706. 9 g kg⁻¹ DM in the dry season; ADF, 329.6 g kg⁻¹ DM in the rainy season and 356.4 g kg⁻¹ DM in the dry season). Higher gas volume was found for BB. Regarding to the comparison between seasons for both forage species, there were no differences (P>0.05) in the volume of gas produced. For IVDMD, it was observed no variations (P>0.05) at 6 and 12 h of fermentation for wet and dry seasons for both grasses. However, for incubation times of 48 and 96 hours, it was found higher IVDMD of both grasses collected in the rainy season, and the BB showed superior results compared to the EI during all the incubation period. It was probably due to the fact that EI had higher levels of fiber, which promoted lower IVDMD degradability. The native grass *Echinolaena inflexa* has potential for ruminant nutrition as the nutrition values remain constant during all over the year including high levels of protein. In addition, the use of EI grass can help to mitigate the impacts of cattle production at farm level and also in the buffer zones of protected areas where native grasses is important for biodiversity conservation.

Keywords: native grass, exotic grasses, ruminants, *in vitro*

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