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Ruminant production and nutrition

Gas production, true degradation of organic matter and partition factor of *Leucaena leucocephala* in natura and preserved

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The Brazilian Semiarid region has livestock farming as a sector of great relevance to the economy, especially the creation of ruminants. Producers must be encouraged to produce and conserve exotic forage species that can be used in animal feed, with the aim of increasing the zootechnical indexes of livestock and trying to reduce the risks caused by the variability of rainfall in the region. In this way, the objective was to evaluate the total gas production (GP), true degradation of organic matter (TDOM) and participation factor (PF) of *Leucaena leucocephala* in natura and preserved in the form of silage and hay. Field activities were conducted at the Caatinga Experimental Field, belonging to Embrapa Semiárido, in the municipality of Petrolina-PE, where samples were collected randomly in the cultivation field, in four replications. For sampling of each plant, branches up to 5mm in diameter were collected, consisting of leaves and stems. After collection, all samples were disintegrated in a stationary chopper, standardized and separated for pre drying in an oven (fresh forage) or conservation in the forms of hay and silage. The evaluation of the degradation of organic matter and ruminal fermentation products was carried out using the semiautomatic *in vitro* gas production technique. The data were subjected to analysis of variance using the PROC GLM procedure and the means were compared using the Tukey test, using the statistical program SAS version 2002. The *Leucaena leucocephala* conservation method changed and the partition factor. When evaluating gas production, higher values ($P < .0001$) were obtained for fresh forage and hay, 166.7 and 164.9 mL.g⁻¹ of organic matter incubated respectively, with no difference between these forms incubated. The TDOM was not influenced by the form of conservation ($P = 0.101$) demonstrating values of 523.6; 553.1 and 524.4 g.kg⁻¹ of organic matter respectively for *Leucaena leucocephala* in natura, preserved as hay and silage. The form of conservation of *Leucaena leucocephala* ($P < .0001$) the partition factor for fresh forage with 3.14, followed by conservation in the form of hay with 3.35 and presenting greater partitions for conservation in the form of silage with 3.61. Thus, the effect of preserving *Leucaena leucocephala* shows that conservation in the form of silage presents a greater partition factor, however hay presents gas production similarly *Leucaena leucocephala* in natura.

Keywords: forage conservation, hay, rumen fermentation, ruminant nutrition, silage

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