EFFECTS OF BOTH A COMMERCIAL INOCULANT AND CHAMICAL ADDITIVES ON FERMENTATIVE PROFILE OF SUGARCANE SILAGE

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Sugarcane (*Saccharumofficinarum*) is an interesting feed source for cattle in tropical area.Homofermentative bacteria (i.e. *Lactobacillus plantarum*) are added to rapidly increase lactic acid content, decreasing the pH of sugarcane silage.However, lactic acid can be oxidized by yeasts during the aerobic exposure of silage.Propionic acid bacteria (i.e. *Propionibacterium acidipropionici*) can ferment sugars and lactate to acetate and propionate, which have antimycotic properties.The objective of this study was to determine the effects ofancommercial inoculant and chemical additives association on fermentative profile of sugarcane silage.Treatments were distributed to forty-eight mini-silos in a 2 × 4 treatment factorial arrangement composed by two levels of microbial inoculant (INO, 0 or 4 g t^{-1} of fresh sugarcane; INO had *Lactobacillus plantarum*at 3.0×10^{10} $cfug^{-1}$ and *Propionibacterium acidipropionici* at 3.0×10^{10} $cfug^{-1}$), three chemical additives (CHE, CaO, NaCl and urea at 1.0% on natural matter basis), and a treatment without additives.After the opening of mini-silos (on day 60), one sample (500 g) of each bucket was collected to extraction of juice by a hydraulic press. Silage juice aliquots (50 mL) were usedto determine the pH,with a digital potentiometer, $N\text{-}NH_3$and organic acids. Data were submitted to analysis of variance using the PROC MIXED by SAS version 9.0.Treatments did not affect pH of silage juice but increased (P = 0.036) it butyrate concentration. An interaction effect was observed on ammonia nitrogen (P = 0.003), acetate (P = 0.012), ethanol (P = 0.022) and lactic acid (P = 0.021) concentration in silage juice. The highest ammonia concentration values were observed in those silages treated with urea, and intermediate values for other treatments, except for CON without CHE which had the lowest value of ammonia nitrogen. The highest values of acetate concentration were observed when silages were treated both INO and CHE. The lowest values of ethanol concentration in silage were also observed when they were treated both INO and CHE. Finally, we observed the highest values of lactic acid bacteria in silages treated INO and CHE, intermediate values for those silage treated only with CHE and lowest values for silages without additives.The association of INO and CHE positively affected the fermentative profile of sugarcane silage.

Keywords : Ethanol. *Lactobacillus*. *Propionibacterium.*

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