

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

INOCULATION AND DIFFERENT STORAGE PERIODS IN SORGHUM SILAGE: FERMENTATION STABILITY

Tiago João TONIN^{*1}, Julio VIÉGAS¹, Stela Näetzold PEREIRA¹, Leonardo ROCHA¹, Lídia CAUDURO¹, Larissa SCHUMACHER¹, João Vitor LEONARDI¹, Eduarda de SOUZA¹

*corresponding author: tiagojtonin@gmail.com

¹Federal University of Sant Maria, Santa Maria, Rio Grande do Sul

Lactobacillus as inoculant in silages favoring lactic acid production from soluble sugars consume with rapid pH drop. This study evaluated *Lactobacillus* inoculation effects on silage from sorghum plants on the production of lactic acid, pH, ammoniacal nitrogen and carbohydrates consumption in sorghum silages with different opening dates. The sorghum hybrid ADV 2499, harvested with an average content of 30.6% DM was chopped and ensiled in plastic laboratory silos. A control treatment and another with 7.5 mL ton⁻¹ of green mass of Total Silo® inoculant were used. Silage openings occurred at 20, 40 and 60 days. The treatments were distributed in to a completely randomized design with four replicates per treatment. At the opening, silage samples were collected, frozen and sent to the laboratory. PH analysis was performed through a digital potentiometer. The data were analyzed in the SAS statistical program through the analysis of multiple means comparison, firstly testing the interactions between doses and opening dates. The difference between averages was made by the Tukey's test, considering the significance level in $p \leq 0.05$. No interactions ($p > 0.05$) were found between the inoculation and opening dates for any of the assessed attributes. Silages from inoculation presented lower pH, 3.90 versus 4.09 from the control treatment (SE \pm 0.05), but without altering the lactic acid levels at silage, which presented an average of 3.96% (SE \pm 0.96). The presence of other acids that or the high variation coefficient (24.25%) can avoids the finding of effects. On the 20th day of opening, there were more soluble sugars in the silage, with values of 1.38, 0.47 and 0.34% (SE \pm 0.19) for 20, 40 and 60 days respectively. NDF and ammoniacal nitrogen content in the silage was lower ($p < 0.05$) at 20 days when compared to the others. There was a continued consumption of sugars by fermentation process, which increased the proteolysis in the silage resulting in an increase in ammonia content. The production of ammonia can occur due to the activity of reductases as a result of *Lactobacillus* fermentation, with produces acetate from pyruvate, instead of lactate (ROOKE & HATFIELD, 2003). Adding 7.5 mL per ton of green mass of tested inoculant did not result in fast fermentative stability in the sorghum silage starting open at 20 days. The silage was stable only from 40 days, since the cessation of the consumption of soluble sugars and stabilization in ammonia production.

Keywords: carbohydrates, lactic acid, *lactobacillus*, pH

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