MICROBIOLOGICAL EVALUATION OF REHYDRATED CORN SILAGE WITH AMYLOLYTIC ENZYMES

VALENSUELA[1], Suellen de Souza (suellenvalensuela@gmail.com); SILVEIRA[1], Karina Andrade da (karina.gabriel75@gmail.com); VASQUES[1], Dalila Nara (dalila_nv@hotmail.com); OLIVEIRA[2], Kelly Mari Pires de (kellyoliveira@ufgd.edu.br); LEITE[2], Rodrigo Simões Ribeiro (rodrigoleite@ufgd.edu.br); GANDRA[3], Jefferson Rodrigues (jeffersongandra@ufgd.edu.br).

[1] Discente do curso de Biotecnologia UFGD Dourados – MS.
[2] Docente do curso de Biotecnologia UFGD Dourados – MS.
[3] Docente do curso de Zootecnia UFGD Dourados – MS.

Corn silage rehydrated is grain storage medium on the farm and may increase the digestibility of starch. During the ensiling grain prolamin degradation occurs involving the starch granules in the endosperm, increasing the enzymatic access to the starch in the digestive tract. The aim of this study was to determine the microbial population of rehydrate corn silage plus amylolytic enzymes. Thirty six mini-silos were used in a completely randomized design consisting of three treatments with twelve repetitions: 1- Control, CON (without amylolytic enzymes); 2- Addition of α-amylase, AMY (amylase Liquozyme® 49.473 UI/mL) and 3- Addtion of amiloglucosidade, GLU (glucosidade AMG 300 L® 35.563 UI/ml). 300ml of commercial enzymes products were used per ton of silage. It was also made the addition of Bacterial inoculants (*Lactobacillus plantarum* $4x10^{10}$UFC/g + *Propionibacterium acidipropionici* $2.6x10^{10}$ UFC/g) were used at a dosage of 4 g/t of fresh matter in all treatments. Samples (0.2 kg) of were collected on day 30 from different sites of all silos and homogenized to form a composite sample. Subsamples of 10 g of each treatment were diluted in 90 mL of sterilized sodium chloride solution (0.9%) and a serial dilution was performed from 10^{-1} until 10^{-6} in test tubes. The microorganism counting was performed in triplicate from each dilution using culture medium of MRS agar to lactic-acid bacteria, PCA agar to aerobic and anaerobic bacteria (48 h of incubation at 37ºC) and agar PDA (potato dextrose agar, 120h of incubation at 26ºC) for mold and yeast. Data were submitted to analysis of variance using the PROC MIXED by SAS version 9.0. Silage plus AMY showed higher Lactic bacteria count compared to CON and GLU, however there was a higher count compared to GLU in relation CON. Silage plus AMY showed higher anaerobic bacteria count compared to CON and GLU, but no differences were observed between GLU and CON. Silages plus GLU had lower counts for aerobic bacteria. To count of molds and yeast were not observed differences between AMY and GLU, however CON showed higher scores than the other. Adding amylolytic enzymes improves the microbiological profile of rehydrated corn silage, increasing the population of lactic acid bacteria and anaerobic.

Palavras-chaves: *Zea mays*. Glucosidade. Microbiology.
Agradecimento: KERA Nutrição Animal Bento Gonçalves-RS, Brasil.