

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

LONG STORAGE PERIOD AND AMYLASES ADDITION ON MICROBIAL COUNTS OF REHYDRATED GROUND CORN SILAGE

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The aim of this trial was to evaluate the action of amylolytic enzymes and storage time on microbial counts in rehydrated ground corn silage. Corn grain was milled, was rehydrated in a ratio of 30:100 (L kg⁻¹) and homogenized. One hundred and twenty experimental silos were prepared in plastic buckets containing Bunsen valves to avoid gas penetration and allow gas scape. The experiment was composed of the following treatments: 1-Control (CON); 2-GLU, (glucoamylase) 300 mL t⁻¹ of fresh matter (Kerazyme 4560, Kera Nutrição Animal, Bento Gonçalves, RS); 3- α -AMI, (α -amylase), 300 mL t⁻¹ of fresh matter (Kerazyme 4577). All silos were also inoculated with KeraSIL grão úmido[®] (Kera Nutrição Animal, Bento Gonçalves, Brazil) added at 4 g t⁻¹ of hydrated ground corn. KeraSIL is composed by *L. plantarum* (4.0×10¹⁰ ufc g⁻¹) and *P. acidipropionici* (2.6 ×10¹⁰ ufc g⁻¹). The silos were packed and were opened (5 mini silos per treatment per time point) on days 30, 60, 90, 120, 150, 180, 210, 240 of storage. Samples 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, nutrient agar to aerobic and anaerobic bacteria (48 h of incubation at 37°C) and agar PDA (potato dextrose agar, 120h of incubation at 26°C) for mold and yeast. Data were submitted to analysis of variance using the PROC MIXED of SAS 9.3 as repeated measures and fixed effects were included: enzyme, time and enzyme by time interaction. The differences between the treatments were studied by orthogonal contrasts, as follows: CON vs GLU + AMI (C1) and GLU vs AMI (C2). Enzyme (P<0.0001), storage time (P<0.0001) and enzyme by time interaction (P<0.0001) effects were observed for latic, anaerobic, aerobic bacteria and mold and yeast counts. Enzymes addition decreased yeast and molds counts (P<0.0001). Silos containing AMI had lower yeast and molds count comparison with those treated GLU (P<0.0001). Enzymes addition decreased aerobic and anaerobic bacteria count (P<0.0001). Longs periods of ensilage as well as amylase addition positively influenced the microbial counts in rehydrated ground corn silage.

Keywords: alpha-amylase, glucoamylase, enzyme, starch

Promoção e Realização:

Apoio Institucional:

Organização: