

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

MICROBIAL INOCULANT EFFECTS ON TOTAL MIX RATION SILAGES WITH DIFFERENT FORAGE TO CONCENTRATE RATIOS: FERMENTATIVE LOSSES

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Total mix ration silages is a balanced diet composed of silage, protein and energy foods, vitamins, minerals and additives that meet the nutritional requirements of animals. The aim of this trial was to evaluate the action of microbial inoculant on total mix ration (TMR) silages with different forage to concentrate ratios on fermentative losses. Sixty mini-silos were used in a 3 × 2 treatment factorial arrangement experimental design, composed by three forages to concentrate ration (**FCR** 60:40; 50:50; 40:60 of TMR); two levels of microbial inoculant (**INO** 0 or 4 g t⁻¹ of TMR; INO was composed by *Lactobacillus plantarum*: 4x10¹⁰ cfu g⁻¹ plus *Pediococcus acidilactici*: 4x10¹⁰ cfu g⁻¹). The TMR was formulated with fresh corn plant, corn meal, whole raw soybean, urea and mineral mixed, according with NRC, 2001 for dairy cows with milk yield 30 L day⁻¹ and isonitrogenous. Experimental silos were prepared in plastic buckets containing Bunsen valves to avoid gas penetration and allow gas scape. At the bottom, separated by a nylon cloth, there was 2 kg of dry sand for quantification of the produced effluent. The silos were packed and were opened on day 60 of storage. The mini-silos were weighed and then opened to determine the gas losses. The silage, silo assembly, the sand layer and nylon screen were weighed to quantify the effluent production. Data were submitted to analysis of variance using the PROC MIXED of SAS 9.3, fixed effects were included: forages to concentrate ration, microbial inoculant and forages to concentrate ration by microbial inoculant interaction. The addition of microbial inoculant did not influence the fermentation losses (g kg⁻¹DM) of TMR silages. Interaction effect of microbial inoculant by forage to concentrate ration was observed for gases and total losses (g kg DM). The TMR silages 60:40 **FCR** without **INO** presented higher losses by gases (148.29 g kg⁻¹ DM) and total losses (159.12 g kg⁻¹ DM) in relation to the other treatments. The TMR silages 40:60 **FCR** had lower effluent losses (g kg⁻¹DM) and higher DM contents independent of **INO** addition. The TMR silages 50:50 **FCR**, independent of **INO** addition presented more balanced results in relation to fermentative losses and DM content, showing great potential on ruminant nutrition, however more studies should be performed to confirm this preliminary data.

Keywords: fermentation, *Lactobacillus plantarum*, *Pediococcus acidilactici*, effluent

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