

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

MICROBIOLOGICAL ANALYSIS AND AEROBIC STABILITY OF TOTAL DIET WITH MAIZE SILAGE

Sillas Mayron da Silva Da SILVA*¹, Lílian de Barros MORAIS¹, Beatriz Ferreira CARVALHO¹, Izabella Carolina de Oliveira RIBEIRO¹, Letícia do Nascimento RESENDE¹, Carla Luiza da Silva ÁVILA¹

*corresponding author: sillas_mayron@hotmail.com

¹Universidade Federal de Lavras, Lavras, Minas Gerais, Brasil

Total mixed ration (TMR) is obtained by the mixture of all ingredients in a homogeneous form and it contributes to a uniform ruminal fermentation, directly impacting in a better use of its nutrients. However, total diets are characterized by low aerobic stability and rapid deterioration. Thus, the aim of this work was to evaluate the aerobic stability and microbiological profile of total diet with maize silage. In triplicate, total diet samples were placed in plastic buckets with three kilograms each. The aerobic stability was evaluated by measuring the temperature with data loggers, programmed to make measurements hourly for a period of 24 h. The number of hours the TMR remained stable before rising more than 2°C above the ambient temperature was used to determine the aerobic stability. Measures of pH were made right after mixing the diet (0 h) and with 24 hours of air exposure. An aqueous TMR extract was prepared for the microbiological analyzes that were performed with samples obtained with 0 h and 24 h of exposure to air. Lactic acid bacteria (LAB) and filamentous fungi were quantified using MRS agar (de Man Rogosa Sharpe) and DRBC medium (Dichloran Rose Bengal Chloramphenicol), respectively. Yeasts were enumerated and isolated from DRBC. Sporulating aerobic bacteria were enumerated and isolated after the pasteurization process of the TMR extract using the medium Nutrient Agar. Isolates were purified and identified by Maldi-Tof MS. Data were analyzed using the statistical software SAS and the means compared using the t Student test. The results of temperature and pH after 24 h of air exposure of the TMR did not significantly differ ($P>0.05$). The results indicated a significant rise ($P<0.05$), after 24 h of exposure to air, in the counting of yeasts and LAB. There was no growth of filamentous fungi after this period and for aerobic sporulating bacteria there was no statistical difference. Among the bacterial isolates identified, most of them belong to the genera *Bacillus* and *Paenibacillus*. The main genera identified for yeasts were *Issatchenkia* and *Candida*. Although the results of temperature and pH did not indicate the aerobic instability of the TMR, it was observed a significant increase in the count of microorganisms associated to the process of aerobic deterioration of diets.

Keywords: aerobic deterioration, forage, Maldi-Tof, microbiota

Acknowledgments: CAPES, CNPq, FAPEMIG

Promoção e Realização:



Apoio Institucional:



Organização:

