

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

EFFECT OF NONWOVEN BAGS WEIGHT ON FIBER ANALYSIS OF FEEDSTUFFS FOR RUMINANTS

Eduardo Michelin do NASCIMENTO*¹, Rafaela Mochochinski GONÇALVES¹, Deborah SANDRI¹, Daniela Borges da CRUZ¹, Matheus FRIEDRICH¹, Sergio Rodrigo FERNANDES¹, Américo Fróes GARCEZ NETO¹

*corresponding author: edu.vetufpr@gmail.com

¹Federal University of Paraná, Palotina, Paraná, Brazil

The use of nonwoven fabric to make bags for fiber analysis of feedstuffs is a way to reduce the analysis costs, since this material is available in large scale on the market and have low prices compared to another fabrics that can be used with the same purpose. However, the industrial standardization of nonwoven fabric does not ensure the required uniformity to its utilization in the fiber analysis. This is mainly related to the variation of grammage along the fabric, which may affect the analysis results. The aim of this study was to evaluate the influence of nonwoven bags weight on the fibrous fractions of feedstuffs for ruminants. Samples of elephantgrass (EG), corn silage (CS) and corn grain (CG) were analyzed. Aliquots of 50 mg were extracted from each sample and placed into nonwoven bags (5 x 5 cm) of four distinct ranges of weight: 0.60-0.70, 0.71-0.80, 0.81-0.90 and 0.91-1.00 g. The sequential fiber analysis was performed following the procedure of autoclave for neutral detergent fiber (NDF) and acid detergent fiber (ADF), and the procedure of extraction in sulphuric acid solution (H₂SO₄ at 72%) for lignin. Thermostable alpha-amylase was added to neutral detergent solution in the NDF analysis, regarding the proportion of 5 µL enzyme per mg of sample. Data were analyzed by ANOVA in a 3 x 4 factorial scheme with three feedstuffs, four ranges of bags weight and five replicates. Means for isolated effects and its interactions were compared by Tukey test (P<0.05). The NDF content was greater in bags with 0.91-1.00 compared to the other weight ranges (47.97 vs. 46.86% of dry matter – DM), which may be explained by the retention of cell content in bags heavier than 0.9 g. In this case, there was a reduction in the pore opening of nonwoven fabric with increase of bags weight, which had hinders the escape of soluble components, overestimating the NDF content. The ADF and lignin contents not differed among the ranges of bags weight, with mean values of 22.35 and 2.40% DM. The NDF, ADF and lignin contents differed among feedstuffs with mean values of 69.42, 34.18 and 3.03% DM for EG; 55.22, 29.12 and 3.79% DM for CS; and 16.76, 3.76 and 0.39% DM for CG. Nonwoven bags with 0.60 to 0.90 g of weight do not affect the results of sequential fiber analysis of feedstuffs for ruminants.

Keywords: acid detergent fiber, amylase, autoclave, lignin, neutral detergent fiber

Promoção e Realização:



Apoio Institucional:



Organização:

