

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

BROMATOLOGICAL COMPOSITION AND FERMENTATION CHARACTERISTICS OF BRS 3042 CORN HYBRID SILAGE IN FOUR AT FOUR MATURATION STAGES

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The corn maturation stage influences the content of dry matter (DM), the silage's fermentation process and bromatological composition. The bromatological composition and fermentation characteristics of the BRS 3043 corn hybrid were evaluated. The agronomic part of the research was developed by EMBRAPA. Five corn beds were planted for each maturation stage. The spacing was 70 cm between plants and the fertilization was 400 kg ha⁻¹ of 08-28-16 (NPK) + 0.5% Zn. Thirty five days after planting, 100 kg of nitrogen ha⁻¹ was applied. The harvests were carried out based on corn maturation stage, with grains without milk line, ¼ of the milk line, ¾ of the milk line and full grain (26.18, 27.25, 36.6 and 44.45% of DM respectively). The plants were chopped at 2 cm and ensiled in 200 L metal drums, which were opened after 56 days. The silages content of DM, mineral matter (MM), organic matter (OM), crude protein (CP), ethereal extract (EE), neutral detergent insoluble fiber (NDF), neutral detergent insoluble corrected for ash and protein (NDFap), insoluble fiber in acid detergent (ADF), lignin, insoluble protein in neutral detergent (IPND), insoluble protein in acid detergent (IPAD), non-fibrous carbohydrates (NFC), calcium (Ca), phosphorus (P), pH and ammoniacal nitrogen as a percentage of the total nitrogen (N-NH₃/TN). Orthogonal polynomials were used to determine if the maturation stage resulted in a linear or quadratic effect on the measured parameters. Differences were considered significant when P<0.05. Pearson correlations between the variables were made when needed. There was a quadratic effect on pH and N-NH₃/TN. The pH of the silages was less than 4.2. The N-NH₃/TN contents were less than 10%. With the advancement of the maturation stage, there was a quadratic effect on the silages DM content. There was a 7.84% reduction in the NDF content, 8.15% in the NDFap content and 13.22% in the contents of ADF until the ¾ of the milk line maturation stage, after this maturation stage the contents were maintained. The CP contents were not altered at maturation stage and presented values higher than 7.0%. The advancement of maturation stage reduced the nutritional value of BRS 3042 corn hybrid silage.

Keywords: corn silage, forage, nutritional value

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