

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

CONTROLLED ATMOSPHERE IN HAYLAGE PRODUCTION OF *Brachiaria brizantha* GENOTYPE MARANDU

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The decrease in forage production during periods of rainfall shortage requires strategies for the conservation of forages. The haylage is maintained through controlled atmosphere in which the oxygen (O₂) and carbon dioxide (CO₂) gases in the silo are controlled, regulating the action of the microorganisms, which can extend the lifespan of the forage after cutting. The objective was to determine the atmospheric control in different pre-dried polyethylene films through an O₂ and CO₂ gases analysis and temperature in different storage times. The experimental design was completely randomized in a factorial scheme (4 x 5), where the factors were four types of polyethylene films with a thickness of 10, 11, 13 and 27 (control, conventional) µm and five storage times (<1 hour, 7, 15, 30 and 60 days after closure), with three replicates. The pasture used to produce the haylage was *Brachiaria brizantha* genotype Marandu, which was cut and dehydrated in the field until reaching 50% of dry matter and packed with approximately 300 kg m⁻³ of forage mass, and manually enveloped. The data were submitted to analysis of variance and the effect of interaction was verified, and the Tukey's test was applied at 5% of significance. There was interaction (P = 0.001) for the storage time and the polyethylene films. Regarding O₂ at the moment of closing (<1 hour), the 11-µm-plastic film presented a higher average with 19.30%, but at 60 days the conventional film (27 µm) showed a higher concentration of O₂ with 3.23%. Regarding CO₂ the difference was observed at 7, 15 and 30 days, where the highest averages were observed in the conventional film with 52.0, 43.3 and 41.6%, respectively. The other films presented similar averages at 7 and 15 days. At 30 days, the lowest averages were observed in 10 and 11 µm films with 30.0 and 32.0%, respectively, with no significance at closing time (<1 hour) nor at 60 days of storage. Regarding the temperature, there was only effect at 15 days, in which the conventional, 10 and 11 µm films presented higher temperatures: 28.5, 28.2 and 28.1°C and a lower temperature was recorded for the 13-µm-film with 27.1°C. The polyethylene films with 10, 11 and 13 µm obtained better atmospheric control, mainly in regard to the presence of O₂ at 60 days of storage.

Keywords: conservation, forage, grass, silage

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