

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

EFFECTS OF HYBRID TYPE AND STAGE OF MATURITY ON CHEMICAL COMPOSITION AND PARTICLE SIZE IN WHOLE-CROP MAIZE SILAGE

Abias Santos SILVA*¹, Luiz Gustavo Ribeiro PEREIRA², Márcio dos Santos PEDREIRA¹,
Fernanda Samarini MACHADO², Mariana Magalhães CAMPOS², Larisse Borges SOUSA¹,
Karine Pinheiro de OLIVEIRA¹, Thierry Ribeiro TOMICH²

¹State University of Southwestern Bahia, Itapetinga, BA 45700-000, Brazil

²Embrapa Dairy Cattle, Juiz de Fora, MG 36038-330, Brazil

*Postgraduate in Animal Science - abias.severo@gmail.com.br

The objective of this study was to investigate effects of hybrid type (dent or flint) and four phenological stages on chemical composition and particle size of whole-crop maize silage. Crops were harvested at 76, 90, 105 and 110 days after sowing for the dent hybrid and 84, 91, 99 and 105 days for the flint hybrid, representing stages of soft dough (SOD), early dent (EAD), ½ milkline (½M) and ¾ milkline (¾M), respectively. Chemical composition and mean particle size (MPS) were evaluated 56-d after ensiling. Except for crude protein content (CP), variables of chemical composition and MPS presented effect of hybrid type ($p \leq .03$), stage of maturity and interaction between hybrid type and stage of maturity ($p < .001$). CP was not influenced by hybrid type ($P = .11$). Greater spread on dry-matter content (DM) was observed to dent hybrid (166; 247; 333 and 415 g.kg⁻¹ to SOD, EAD, ½M and ¾M stages, respectively) than flint hybrid (204; 248; 302 and 341 g.kg⁻¹). The dent hybrid presented lower CP (63.6 g.kg⁻¹) at ¾M stage and similar CP on the others stages of maturity (81.6-86.9 g.kg⁻¹). Flint hybrid do not presented difference on CP among stages of maturity (mean 78.9 g.kg⁻¹). Dent hybrid presented reduction on neutral detergent fiber content (NDF) from the EAD stage (from 639 to mean of 476 g.kg⁻¹ on last three stages) and flint hybrid only in the ¾M stage (from mean of 583 to 540 g.kg⁻¹). Greater non-fibrous carbohydrates content (NFC) was obtained from the stage ½M for the dent hybrid (mean 419 g.kg⁻¹) and in the EAD and ¾M stages for the hybrid flint (mean 309 g.kg⁻¹). Similar MPS was observed to dent hybrid at SOD, EAD and ½M stages (9.5-10.3 mm), while flint hybrid showed lower MPS at EAD stage (10.9 mm) and similar results on the others stages of maturity (12.1 mm). The results indicate the ½M stage as ideal to ensiling for both hybrids.

Keywords: dent maize, crude protein, dry-matter, flint maize, NDF, NFC

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