BIA BOLETIM DE INDÚSTRIA ANIMAL

FORRAGE AND PASTURES

WHEAT SILAGE PRODUCTION TRIALS IN MINAS GERAIS

ENSAIOS DE PRODUÇÃO DE TRIGO DE ENSILAGEM EM MINAS

Fernanda de Kássia Gomes*[1]; Marcio de Souza Bastos[2]; Edilane Aparecida da Silva[3]; Clenderson Corradi de Mattos Gonçalves[2]; Marcelo Abreu Lanza[1]; Karina Toledo da Silva[1]; Maurício Antônio de Oliveira Coelho[4]

[1]EPAMIG Centro-Oeste, Prudente de Morais - MG, Brazil;
[2]EPAMIG Sede, Belo Horizonte - MG, Brazil;
[3]EPAMIG Oeste, Uberaba - MG, Brazil;
[4]EPAMIG Oeste, Patos de Minas - MG, Brazil.
*Corresponding author: fernanda.gomes@epamig.br

Abstract

The use of wheat silage is very advantageousbecause it is a winter crop and does not compete with the traditional summer crops in southern Brazil or the Cerrado biome, such as soybeans andcorn. Preliminary studies developed by EPAMIG (Empresa de Pesquisa Agropecuária de Minas Gerais) in Patos de Minas demonstrated that the wheat cultivar MGS-Brilhante, characterized by the absence of awn (structures that injure the animals' rumen) has a high potential for silage production. The objective was to evaluate the wheat for silage by its productivity and other agronomic characteristics, of wheat harvested in two trials. For this, two areas belonging to EPAMIG/Centro-Oeste, located in Prudente de Morais and Felixlândia, were used. The soil was fertilized and corrected based on soil analysis interpretation. To establish the experimental fields in Prudente de Morais and Felixlândia, 350kg/ha and 300kg/ha of 8-28-16 fertilizer were used, respectively. The sowing was in rows with 50 cm spacing, using 152 kg/ha of MGS-Brilhante seeds. Both areas were irrigated. The material was harvested when the plants reached dry matter (DM) contents of 32 and 34% in Prudente de Morais and 44% in Felixlândia. The production per area was evaluated using a frame (0.100m²), in which all the forage inside the frame was collected at ground level. Wheat morphological composition (leaves, stems, dead material and spikes) was determined. Subsequently, the plant components were weighed and dried in an oven at 55º C for 72 hours to determine the DM content. Wheat yield data (t ha^{-1}) and morphological components (kg.ha^{-1}) were calculated, all based on DM. The wheat harvested in Prudente de Morais had yields of 22.35 and 22.79t.ha^{-1}, plant height (H) of 85.7 and 86.8 cm, leaf mass (LM) of 2314and 1182kg.ha^{-1}, stem mass (SM) of 13,809 and 10,291kg.ha^{-1}, dead material mass of 13,809 and 10,291kg.ha^{-1}, spike mass (SM) of 2,038 and 1,943kg.$ha^{-1}$and percentage of spike on the whole plant (%E) of 9.07 and 8.46%, with the DM contents of 32 and 34%, respectively.The wheat harvested in Felixlândia had yield of 20.22 t ha^{-1}, H of 95.3 cm, LM of 4,965 kg.ha^{-1}, SM of 5599kg.ha^{-1}, dead material mass of 2110kg.ha^{-1}, EM of 4528kg.ha^{-1}, and %E of 22.08%.On average, the wheat yield was 21.79t.ha^{-1}, which for a second harvest is considered excellent. Thus, there is an opportunity to produce silage in the offseason period, when there is usually enough area available for planting. The parameters %DM*EM and %DM*%E showed a positive correlation between cause and effect (0.83 and 0.92, respectively), indicating that higher DM contentled to greater participation of grain in the silage. However, %DM*LM showed a negative correlation (-0.89). This indicates that greater plant physiological maturity resulted in a smaller amount of green leaves and larger spikeamount. Both morphological components are nutritive: the spikeis rich in starch, which is a high-energy ingredient, and the leaf has a high nutrient content and good digestibility. In addition, materials with high DM content hamper silage compaction.Wheat silageproduction is advantageous because in addition to being highly productive, it does not compete with traditional summer crops cultivated in Brazil.

Keywords:

MGS-Brilhante, yield, morphological components, winter crop, awn.

Acknowledgments:

We thank FINEPfor funding this study.