INTERCROPPING WITH SORGHUM AND MEGATHYRSUS FOR SILAGE AND PASTURE PRODUCTION IN INTEGRATED SYSTEMS

SEMEADURA CONSORCIADA COM SORGO E MEGATHYRSUS PARA PRODUÇÃO DE SILAGEM E PASTAGEM EM SISTEMAS INTEGRADOS

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Abstract

The search for sustainability has been arousing increasing interest in production systems that improve productivity and minimize environmental impacts. An alternative is the intercropped sowing technique, which has shown positive results in the production of silage and pasture in integrated systems. This study aimed to compare the conventional sowing of forage sorghum or intercropping with *Megathyrsus maximum* cv. Mombaça or *M. maximum* cv. Zuri for productivity (t ha^{-1} of green mass) and dry matter (%) of sorghum and grasses during harvest. Additionally, the number of sorghum plants per linear meter, and the dry matter and dry forage mass (FM) of grasses in the first regrowth in the intercropped treatments were evaluated. The experiment was carried out at the Instituto de Zootecnia in Ribeirão Preto, in a field of seven hectares. The experimental design was randomized blocks (three blocks) and three treatments: forage sorghum (FS), forage sorghum intercropped with Zuri (SZ) and forage sorghum intercropped with Mombaça (SM). The data obtained were submitted to analysis of variance using the PROC GLM of SAS (2013) and the differences between the means of the treatments were contrasted using the PDIFF option. Results were considered statistically significant when $P<0.10$. The values in t ha^{-1} of green mass at harvest were significantly different ($P=0.07$) between the treatments studied, indicating higher productivity for the intercropped treatments, regardless of the type of grass (55.34 t ha^{-1} for SZ and 55.66 t ha^{-1} for SM compared to conventional sorghum, of 34.11 t ha^{-1}). The material harvested was ensiled with ideal values of dry matter, being 30.83% for FS, 29.75% for SZ and 31.72% for SM, with no significant difference between them ($P=0.48$). Zuri and Mombaça grasses yielded 29.54 t ha^{-1} and 25.87 t ha^{-1} of green mass, respectively, with no significant difference between them ($P=0.63$). The number of plants per linear meter of sorghum was not significantly different between treatments ($P=0.23$). The results were 6.58, 7.66 and 6.16 for FS, SZ and SM, respectively. The results of dry matter content and forage mass yield (t ha^{-1}) in the first regrowth of grasses did not differ significantly ($P=0.51$ and $P=0.50$, respectively), with mean values of 22.70% and 1.45 t ha^{-1} for SZ and 22.30% and 1.58 t ha^{-1} for SM. Thus, the results show the productive benefits of the use of intercropping of sorghum with forages of the species *Megathyrsus maximum* for silage production, compared to conventional planting. In addition, it provides the formation of pasture for cattle in the dry season, simultaneously sharing the soil, agricultural inputs, machinery, labor and fuel, in the implementation of the systems, contributing to sustainability.

Keywords

Crops, forage, productivity