

MARANDU PALISADE GRASS PRODUCTIVITY AND ANIMAL PERFORMANCE IN MONOCULTURE AND INTEGRATED SYSTEMS WITH MAIZE

PRODUTIVIDADE DE CAPIM MARANDU E DESEMPENHO ANIMAL EM SISTEMAS DE MONOCULTIVO E DE INTEGRAÇÃO COM MILHO

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Integrated systems with maize usually present several advantages, such as the greater cycling of organic matter in tropical soil and reduction of production risk. However, there is concern about pasture formation, culminating in delays in animal performance. Our goal was to compare the performance integrated systems with the monoculture regarding beef cattle weight, forage mass and in proportion of grass leaves. We tested a monoculture treatment of Marandu palisade grass (*Brachiaria brizantha* cv Marandu (Hochst.) Stapf.) and an intercropping system with maize (*Zea mays* L.) with four types: maize and palisade grass sown simultaneously without herbicide (MG), maize and palisade grass sown simultaneously plus herbicide (MGH), palisade grass sown with topdressing maize (MGT) and palisade grass sown in the maize row and inter-row (MGR). We used a completely randomized block design with three replications in 8,923 m² plots. The maize was mechanically harvested in May 2016 and the animals entered in the area for grazing for three months (August to October). Plant samples were collected with the use of pruning shears in four areas delimited by squares of 0.25 m² per plot, followed by separation and proportional quantification of grass leaf in relation to the plant dry matter in four collections. We allocated six Caracu bulls in each treatment - with stocking rate adjustments - which were weighed before entering the pasture and three more times at 28-day intervals. The grass dry mass and leaf proportion and the animal weight data were analyzed using the PROC MIXED of SAS with repeated measures, considering the grass cultivar and the animal breed as the fixed effects and the production system as the random effect. The data were compared with Tukey's range test. The results demonstrated that the individual animal weight among the treatments was not significant (474.42 kg). However, the monoculture animal unit (3.86 AU, considering 1 UA = 450 kg) and forage dry mass (8,690.34 kg) were higher than all the integrated systems (2.37 AU and 3,228.58 kg), but without pairwise differences among these, a result of delay in the pasture formation. However, the grass leaf proportions of the all integrated systems (48.99%) were higher than in the monoculture system (22.61%), implying an advantage of integration, since the leaf content is an indicator of pasture quality. Furthermore, the grass leaf proportion of MGT (54.90%) was higher than MGR (44.10%), presumably caused because MGT was planted later and possibly suffered from wilting by the maize shade effect, since it was in the maize row and inter-row. We first can conclude there is a delay effect in the pasture formation when using a system of Marandu palisade grass integrated with maize, but this is compensated initially by the low stocking rate, considering the better future quality fodder supplied to livestock. Secondly, the pasture planting as maize topdressing has advantages by avoiding debris in palisade grass by the presence of the other crop, culminating in a higher proportion of leaves.

Keywords: livestock integration, leave proportion, beef cattle

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