

STUDY OF AN ELEPHANTGRASS PASTURE MIXED WITH CULTURES OF SUMMER AND WINTER SEASON: YEAR I

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Introduction

Systems more sustainable in production of milk and meat have in roughage as basis of animal nutrition. Within species studied is elephantgrass (*Pennisetum purpureum* Schum.) a perenne grass, with higher productivity and good adaptation at Brazilian climate conditions. His use is been intensificate under rotative grazing. This work had the objective study behavior and quality of elephantgrass pasture (EG) mixed with summer and winter cycle species during agricultural year of 2002.

Material and Methods

The trial was conducted in Santa Maria, RS, South region, Brazil. The EG cv. Merckeron Pinda was implanted in lines with 3m of distance, in October, 2001. It was utilized organic manure, in form of swine waste (70 kg of N/ha) and bovine waste (30 kg of N/ha). The experimental area (0.33ha) was divided in two paddocks. During summer period, the pasture was composed by EG (in lines) and by species with spontaneous development (SSD), principally *Sida santaremnensis* and *Chloris gayana* (between lines). The time of utilization of pasture in summer period was January, 16th to April, 17th, 2002. The animals occupied the paddocks during one day and time of rest for paddocks varied of 33 to 45 days. Were utilized Holstein heifers with average weight of 160kg and they received 0.5% BW of concentrate (16% CP). During winter period, was utilized, between lines, black oat (*Avena strigosa* Scheb.) seeded at throw, in scaled form in April, 24th and May, 9th, 2002, in paddocks 1 and 2, respectively, using 110 kg of seeds/ha. Were made seven grazed during June, 12th, and October, 14th, 2002. In this periods, experimental animals utilized were Holstein lactation cows, with average weight of 530kg which received, later each milking, feeding supplementation (3.5kg of concentrate and 3.5kg of maize silage/animal/day). To determinate pasture quality were collected sample of grazing simulation after watching of feeding behavior of animals during 15min in start and finish of grazing. These samples were analyzed to determinate crude protein (CP), *in vitro* digestibility of dry matter (IVDDM) and neutral detergent fiber (NDF) level. The experimental design was randomized blocks with 6 treatments (grazing) and 2 repetitions (paddocks) for summer period and incomplete randomized blocks with 7 treatments (grazing) and 2 repetitions (paddocks) for winter period. The data were submitted at analysis of regression with support of SAS' statistical package (1996).

Results

In winter period, mean availability of pasture was 8257 kg DM/ha, where participation of EG was 32.5%. The medium level to CP, NDF and IVDDM of pasture were 11.52; 64.15 and 56.67%, respectively. Animal charge was 2344 kg BW/ha. In winter period, mean availability of pasture was 3278 kg DM/ha. The medium level of CP,

NDF and IVDDM of pasture were 15.6; 58.6 and 63.92%, respectively. Animal charge was 690 kg BW/ha.

Discussion

The availability of EG observed in this trial (2688 kg DM/ha) is minor compared with data of Restle et al. (2002) which verified 2874 and 4126 kg of DM to January and April, respectively. A minor availability occurred due implantation and to be first year of utilization. In winter period, mean availability of EG (2501 kg de MS/ha) was minor at found by Botrel et al. (1994) where was observed value of 4599 kg DM/ha as mean of seven varieties of EG. Availability of EG during winter period is higher compared with summer period. This fact is explained by high presence of tiller (64.60%) and dead material (20.59%) in this period. In summer period, CP level of pasture was similar at data of Silva et al. (2002) that working with genotypes of EG under grazing, registered an average of 10.64%. In winter period, CP level was of 15.6% probably by presence of black oat. Frizzo et al. (2003) found values of 12.75% working with black oat and ryegrass. The values of NDF on two periods were minors at values obtained to Silva et al. (2002). Probably, the diversity of pasture had contributed to obtain of these values. The average IVDDM of pasture in summer period was superior found by Restle et al. (2002). In winter period, the pasture, constituted basically by black oat, presented a major level (63.92%) of digestibility.

Conclusion

The system of forage production composed by EG and SSD in Summer and EG and black oat in Winter demonstrate positive response as in complementation of forage mass as forage quality.

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