

## BEHAVIOR OF LACTATION COWS ON ELEPHANTGRASS PASTURE MIXED WITH BLACK OAT, MANAGED UNDER AGROECOLOGICAL PRINCIPLES

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### Introduction

In production systems of organic milk or agroecological with fundament in the free choice of animals and diversity of species in grassland establishment, animal behavior is an important instrument on evaluation of a pasture composed to perennial culture of summer cycle and other annual winter cycle specie.

### Material and Methods

The trial was conducted in Santa Maria, RS, South region of Brazil, with objective to evaluate behavior of lactation cows under grazing. Was utilized an area with 0.33ha divided in two paddocks. The pasture was composed by elephantgrass (*Pennisetum purpureum*), established in lines and black oat (*Avena strigosa*), seeded between lines. Were utilized five lactation cows, of Holstein breed, with average weight of 530kg and average milk production of 14 liters/cow/day, which received them, later milking, feeding supplementation of 3.5kg of concentrate with 20% of crude protein and 3.6kg of maize silage/cow/day. Data collect, effectuated at each 10 minutes for two observers, was realized at 6 p.m. to 6 a.m. and 8 a.m. to 4 p.m.. Were made four evaluations (characterizing winter period) in June, 12<sup>th</sup>, July, 17<sup>th</sup>, August, 25<sup>th</sup> and September, 14<sup>th</sup>, 2002. The cycles of grazing were of 29 to 51 days and time of occupation of paddock was one day. Behavior parameters evaluated were: average time of grazing of elephantgrass (GEG), grazing of black oat (GBO), grazing of elephantgrass and black oat (GEGBO), rumination (R) and idleness (I). The experimental design used was randomized blocks with four treatments (grazing season) and five repetitions (cows). Data collected in each parameter were submitted at analysis of variance has been the differences between means compared by Tukey's Test, at 5% level of significance with support of SAS statistical package (1996).

### Results

Average time of grazing on four evaluations was 7h 55min. It was verified that major time spent in grazing was during sunlight, with 59.22% of total time of grazing. The minor value to R occurred in 2<sup>nd</sup> evaluation. In others evaluations, varied of 8h 10min to 8h 37min, not occur significant difference among their (P>0.05). Average time of I on four evaluations was 4h. Data of behavior analyzed statistically found in Table 1. Data of botanical compounds of pasture are in Table 2.

### Discussion

Average time of grazing is similar at value found to Phillips & Rind (2001) which working with Holstein cows grazing ryegrass (*Lolium perenne*) obtained 8h 9min, and Orr et al. (2001) observed time of grazing of 7h 42min. The major time of grazing occurred during sunlight. This behavior is waited during winter period where the temperatures guarantee a better thermic well-

being. High values to GEG occurred in June to September, demonstrated that the animals feeding this culture although to be in senescence stage (June) and start of summer cycle (September), respectively. The major GEGBO occurred in last evaluation, when cows stayed short time in idleness, may be the needed to select diet, once time the black oat presented 62.92% of tiller and elephantgrass was composed basically by bud and dead material. Minor time of rumination and major time of idleness occurred in second evaluation, coinciding with major time of grazing in black oat, probably in function of better quality of pasture on period (Table 2).

### Conclusion

It were verified differences in behavior parameters of cows influenced by changes of the pasture compounds.

Table 1. Behavior parameters of time of grazing in black oat (GBO), elephantgrass (GEG), elephantgrass and black oat (GEGBO), rumination (R) and idleness (I) on four evaluations.

Parameters	Treatments			
	June, 12th	July, 17th	August, 25th	September 14th
GBO	10.702 <sup>b</sup>	30.569 <sup>a</sup>	23.935 <sup>a</sup>	27.273 <sup>a</sup>
GEG	28.947 <sup>a</sup>	2.277 <sup>b</sup>	11.311 <sup>b</sup>	23.471 <sup>a</sup>
GEGBO	39.649 <sup>b</sup>	32.846 <sup>c</sup>	35.246 <sup>bc</sup>	50.744 <sup>a</sup>
R	43.158 <sup>a</sup>	34.309 <sup>b</sup>	41.639 <sup>a</sup>	40.826 <sup>ab</sup>
I	17.193 <sup>b</sup>	32.845 <sup>a</sup>	23.114 <sup>b</sup>	8.430 <sup>c</sup>

Means followed of distinct letter, in line, are different among their by Tukey' Test (P<0,05).

Table 2. Percentage of botanical compounds of elephantgrass (EG) and black oat (BO).

Botanical compounds (%)	June, 12th	July, 17th	August, 25th	September ,14th
LL (EG)	24.68	9.4	0.03	26.34
Tiller (EG)	66.32	67.04	72.63	56.78
D.M. (EG)	9.00	23.56	27.34	16.88
L.L (BO)	69.65	50.57	41.77	14.75
Tiller (BO)	25.00	38.11	37.12	62.92
D. M. (BO)	5.35	11.32	21.11	22.33

LL- leaf lamina ; D.M. – dead material

### References

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