PERFORMANCE OF BUFFALOES ON CULTIVATED PASTURES OF *Brachiaria humidicola* WITH MINERAL SUPPLEMENTS CONTAINING UREA

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INTRODUCTION

Buffalo farms in the Amazon region are generally based on native pastures in which the animals reach about 350 kg in 30 months of age. During fattening the daily liveweight gain is around 300 g/head. Buffaloes grazing cultivated pastures based on Koronivia grass (*Brachiaria humidicola*) have gained liveweight varying from 460 to 772 g (1,2,3). The crude protein (CP) content of Koronivia grass is generally lower than values found for other grasses used in cultivated pastures in the Amazon region (4). CP is significantly lowered with the increase of plant age and decrease of rainfall (5), affecting liveweight gains (3). Therefore, in these conditions, there is a need for supplementing the animals with a nitrogen source. Studies carried out in Brazil (6,7) to verify the effect of mineral supplement plus urea on buffalo production showed lower weight losses and even weight gains during dry periods. This paper reports an experiment carried out to study liveweight gains of buffalo males grazing Koronivia grass pasture supplemented with minerals containg different levels of urea.

MATERIAL AND METHODS

The experiment was carried out in a Koronivia grass pasture located in the Agroforestry Research Center for the Eastern Amazon (CPATU), in Belém, Pará, Brazil. The climate is an Afi (Köppen classification). Annual rainfall is about 2.870 mm, rainy period from December to May. Anual average temperature and humidity are 26 ^{o}C and 85% respectively (8). The soil is a Yellow Latosol of low fertility (Oxisoil). Two paddocks of 2 ha each per treatment were used. Treatments were: 0 (A), 30 g (B) and 60 g (C) of urea (minimum of 45% of nitrogen content) per 100 g of the mineral mixture. The experiment had two phases, the first with 141 days and 2 head/hectare (from August 1988 to December 1988); and the second with 196 days and 1.5 head/hectare (from August 1991 to March 1992). The decrease in stocking rate was necessary for matching a lower forage availability in phase 2, due to severe charges of spittle bug (*Deois* sp.). In each phase, three groups of male buffaloes (Murrah) ageing about one year and of similar initial weight were used, in a continuous grazing system. The animals were weighed at 28-day intervals after a 15-hour fasting period. In these occasions forage availability

Index terms: Amazon, supplementation, mineral mixture, live weight gains

was measured and samples were taken for determining dry matter. The experimental design was completely randomized with two replications. Response variables were initial weight, liveweight daily gains and the intake of mineral supplement containg urea.

RESULTS AND DISCUSSION

Data of initial and final weight, and liveweight gain during the experiment and per day, for phases one (P_1) and two (P_2) are presented in Table 1.

TABLE 1. Liveweight gain of male buffaloes under grazing supplemented with minerals and urea

Variable	Level of Urea (%)		
	0	30	60
Phase 1			
Number of animals	8	8	8
Initial weight (kg)	249 a	250 a	248 a
Final weight (kg)	349	346	333
Liveweight gain (kg)	101	96	85
Liveweight daily gain (g)	715 a	679 a	604 a
Phase 2			
Number of animals	6	6	6
Initial weight (kg)	259 a	258 a	262 a
Final weight (kg)	349	344	357
Liveweight gain (kg)	90	86	95
Liveweight daily gain (g)	258 a	439 a	485 a

Averages with same letter do not differ ($P<0.01$).

In both phases there were not significant differences between the treatments for the variables studied. Liveweight gain in P_2 was lower, probably due to the lower forage availability in that period (average of 3 t/ha of dry matter in the last three months, against on average of 5 t/ha of dry matter during the last three months of P_1). The lack of response of the animals to urea supplementation may be due to a low energy content of the available forage. These results agree with those found in integrated pasture system (9) but differ from those found in other region (6,7), which found advantage for treatments including urea. Daily intake of minerals plus urea was higher than for mineral without urea in P_1 (124 against 101 g/head) but no difference was found for P_2, which had a lower average intake (69 g/head), probably as a consequence of lower forage availability.

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