BUFFALO MEAT PRODUCTION USING AN INTEGRATED SYSTEM WITH CULTIVATED AND NATIVE PASTURES

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INTRODUCTION

Buffalo raising in the Amazon region, is developed mainly in extensive farms, using ecosystems formed by floodable native pasture and cultivated pasture in upland. The floodable native pastures, formed by rivers of muddy water, are fertilized by the deposition of sediments in suspension in the water, when the river overflows. Those areas can support pastures with high potencial for producing forages of good nutritive value. However, when the inundation comes, from February to July, the forage stays above the water or submerged in quiescent status, becoming inaccessible for the animals. Therefore, there is a necessity of establishing cultivated pastures in the upland areas using *Brachiaria humidicola*, for its excelent productivity and rusticity characteristics and the good adaptation to the low fertility soils in those areas, as animal feed alternative in critics periods in a integrated system with native pasture in floodable areas during the dry period of the year.

MATERIAL AND METHODS

The experiment was carried out in a lowland experimental field, located at Monte Alegre, Pará, Brazil, Agroforestry Research Center for the Eastern Amazon (CPATU). The climate is hot and humid. The average annual rainfall is 2,100 mm. The lowland soils are Gley Humic and upland soils are Oxisoils. The native pasture were composed by the genera *Echinocloa*, *Hymenachne*, *Leersia*, *Luziola*, *Oryza* and *Paspalum*. The cultivated pasture of uplands was based on *Brachiaria humidicola*, grazed during the wet season. The experimental treatments were: A - Integrated management system based on grazing of floodable native pasture in lowland during the dry season, followed by grazing cultivated pasture during the wet season with low stocking rate; B - Same of treatment A with medium stocking rate; C - Same of treatment A with high stocking rate; and D - Traditional management system based on grazing floodable native pasture all year without control of stocking rate. The experimantal design was a complete random with two paddocks for treatment and four animals in each paddock, for the treatments based on the integrated management systems. For the traditional system eight animals were used. The experiment was carried out during three periods: 1985/1986; 1986/1987; and 1987/1988.

Index terms: Floodable lowland, upland pasture, *Brachiaria humidicola*, management systems.

RESULTS AND DISCUSSIONS

During the experimental period the averages of productive parameters for the management systems (integrated and traditional) are presented in Table 1, from 1985 to 1988.

Table 1. Average of daily productive parameters of integrated an traditional systems, period of 1985 - 1988 (kg)

Systems	Initial weight	Final weight	Weight gain	Weight gain (lowland)		Weight gain (upland)
				dry season	wet season	
Integrated	217[a]	452[a]	0.648[a]	0.656[a]	--	0.649
Traditional	216[a]	368[b]	0.415[b]	0.692[a]	0.114	--

Means with same letter do not differ (P<0.05).

These results show that the averages of weight gain in the whole experimental period were significantly different, with advantages for the integrated system in which the final daily weight gain was 0.649 kg in upland pastures versus 0.114 kg for the daily weight gain for the animals of the tradicional system. The average weight between stocking rates for each experimental period, using cultivated pasture, in the integrated system, is presented in Table 2.

Table 2. Averages of productive parameters between stocking rates, periods of 1985-1988 (kg).

Stocking rates (animal/ha)	Inital weight	Final weight	Weight gain			Weight gain per hectare
			Period	Lowland	Upland	
1985/1986						
1	200[a]	453[a]	0.697[a]	0.730[a]	0.669[a]	131[b]
2	189[a]	448[a]	0.711[a]	0.824[a]	0.615[a]	241[a]
3	210[a]	427[a]	0.563[a]	0.650[a]	0.551[a]	324[a]
1986/1987						
1	227[a]	469[a]	0.642[a]	0.557[a]	0.732[a]	133[c]
2	227[a]	470[a]	0.658[a]	0.605[a]	0.647[a]	260[b]
3	229[a]	470[a]	0.628[a]	0.573[a]	0.714[a]	390[a]
1987/1988						
1	225[a]	466[a]	0.659[a]	0.665[a]	0.652[a]	218[b]
2	222[a]	469[a]	0.674[a]	0.663[a]	0.687[a]	346[a]
3	231[a]	452[a]	0.603[a]	0.635[a]	0.567[a]	381[a]

Means with same letter do not differ (P<0.05).

Means between stocking rates were statiscally different for weight gain per hectare, with advantages for the higher stocking rates. The other productive parameters were not significantly different. The results presented in Table 1 show a daily weight gain of 0.648 kg for the integrated system and 0.415 kg for the tradicional system. Data from EMBRAPA (1) show a daily average gain per animal of 0.536 Kg. The average of final weight of 443, 470 and 462 Kg between the stocking rates

in the periods of 1985/1986, 1986/1987 and 1987/1988, respectively, where better than the averages of 402, 338, 336 and 328 kg reported by EMBRAPA (1) for Mediterranean, Carabao, Baio and Jafarabadi buffaloes respectively, with 24 months of age, fattened in the same conditions of this experiment. In the conditions of Marajó Island, with upland native pasture using Mediterranean, Carabao and Jafarabadi buffaloes, the final weigt of 395, 357 and 324 kg, respectively, with the age of 24 months were lower than the weight presented in this work (1). Similar data were found for floodable native pasture of lowland (*Echinocloa pyramidalis*) (2), which final weights were 395.5 and 437.7 kg for Mediterranean and Murrah buffaloes, respectively, ageing 21 months and stocking rate of 1.5 animal/ha/year. Data from Mediterranean buffaloes fattened in cultivated pasture (*Brachiaria humidicola*) of uplands show a final weight of 438.3 kg, using a stocking rate of 2 animal/ha/year (3). The averages of daily weight gain of 0.657, 0.643 and 0.645 kg between the differents stocking rates in the periods of 1985/1986, 1986/1987 and 1987/1988, respectively, were similar to others results which reported daily gains of 0.636 kg with stocking rate of 2 animal/ha/year (3), and 0.631 kg with stocking rate of 1.5 animal/ha/year (2).

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