BUFFALO MILK PRODUCTION IN THE AMAZON REGION

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INTRODUCTION

Although the main purpose of buffalo breeding in the Amazon region is meat production, in some farms the herds are also exploited for milk production, which is commercialized in natura or used for cheese making. The consumption of buffalo milk is negatively affected by long distances between the farms and urban centers. It has been observed a good potential for milk production from buffalo herds in the Amazon. This is an alternative for setting up milk production systems in small areas around urban centers, aiming to suply the population with higt quality milk products. Results from research studies carried out on this subject show good possibilities for developing regional milk production systems, in areas where dairy cattle do not present good adaptation to the environmental conditions (1). The main results from those research studies are presented in this paper, with respect to different Amazon ecosystems.

MILK PRODUCTION

Native Pasture Ecosystem: In lowland floodable native pasture of the Amazon River shores, buffaloes of the "Baio" type (*Bubalus bubalis* var. fulvus) showed milk production of 993 kg/head, with 8.7% of fat and during 251 days, one milking per day, without any supplements. This production is higher than the regional average of 800 kg/head, during 240 days. Floodable Cultivated Pasture Ecosystem: Milk production of Mediterranean buffalo cows, in floodable pasture based on *Echinocloa pyramidalis*, in Belém, Pará, Brazil, with supplementary feeding did not show any economical advantage, probably due to the good quality of that grass species. In a study carried out with Mediterranean and Murrah cows, involving 745 lactations, in Belém, Pará, Brazil, averages of 1,656 kg of milk per head, 274 days of lactation and 7.1% of fat were obtained (2). Murrah buffalo cows grazing *Echinocloa pyramidalys* based pastures did not show any significant response to supplements containing 15 to 19% of digestible protein and 65 to 76% of total digestible nutrients, and the averages varied from 7.6 to 8.4 kg/cow/day (3). The cows produced 24% more milk when were milked twice a day, instead of Once (4,5). Mediterranean and Murrah cows milk production is presented in Table 1, which shows an animal performance about 160% higher in relation to the regional average (6).

Index terms: Native pasture, cultivated pasture, milk composition, dairy product.

TABLE 1. Milk production of buffalo cows grazing floodable cultivated pastures.

Breed	Lenght of lactation (days)	Fat (%)	Milk production (Kg)
Mediterranean	316	7.7	2,055
1/2 Murrah-1/2 Mediterranean	338	7.3	2,062
3/4 Murrah-1/4 Mediterranean	340	6.4	1,958

Cultivated Pasture Ecosystem: In Marajó Island, Pará, Brazil, Murrah buffalo cows grazing *Brachiaria humidicola* pasture and supplemented with minerals, produced 1,389 Kg of milk in 269 days of lactation, two milkings/day. This production is 70% higher than the regional average (7). In Belem, Pará, in cultivated pasture based on *B. humidicola*, Mediterranean buffalo cows supplemented with wheat bran, cassava and brewer's yeast produced an average of 7.7 Kg of milk/cow/day, 7.7 to 8.2% of fat. The average for non supplemented cows was 6.7 Kg/cow/day, 7.2% of fat (8).

CHEMICAL COMPOSITION AND MILK PROCESSING

The mean chemical composition of buffalo milk produced in a floodable cultivated pasture ecosystem based on *Echinocloa pyramidalis* was 83.6; 16.4; 7.9; 8.5; 3.6; 3.6; 0.81; 0.27; and 0.28%, respectively for water content, dry matter, fat, non fat solids, casein, ash, calcium and phosphorus (9). Milk processing, aiming commercialization of by products, allow the producers to obtain a higher income, due to a better economical return in relation to cattle, as it can be observed in Table 2 (10).

TABLE 2. Productivity of buffalo milk products in relation to cattle.

Dairy product	Productivity (Kg milk/Kg product)		B/C (%)
	Buffalo milk (B)	Cattle milk (C)	
Yogurt	1.20	2.0	40
CPATU cheese(1)	4.56	6.0 - 8.0	35
Mozzarella	5.50	8.0 - 10.0	39
Provolone	7.43	8.0 - 10.0	20
Marajó cheese(2)	6.00	10.0 - 12.0	41
Creamy milk sweet	2.56	3.5	29

(1) Manufactured at the Agroforestry Research Center for the Eastern Amazon (CPATU).
(2) Manufactured in Marajó Island farms.

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