

EVALUATION OF CARCASS INCOME AND PHYSICAL-CHEMICAL CHARACTERISTICS OF THE "BABY BUFFALO" MEAT

¹LOURENÇO-JUNIOR, J. B.; ³LOURENÇO, V. V.; ¹COSTA, N. A.; ⁴MOURA CARVALHO, L. O. D.; ²LOURENÇO, L. F. H.; ³SOUSA, C. L.; ⁵SANTOS, N. F. A.

¹Researches of Embrapa Eastern Amazon. P.Box, 48. CEP 66.095-100, Belem, Para State, Brazil - E-mail: lourenco@cpatu.embrapa.br.

²UEPa/CCNT - E-mail: luciafhl@hotmail.com.

³UFPA - E-mail: sousa@ufpa.br.

⁴Agronomist. Trav. Serzedelo Corrêa, Edifício Manoel Pinto da Silva, Aptº. 1104 - Belém, Pará State, Brazil. CEP 66.0000.

⁵Grant holder PIBIC/CNPq/Embrapa.

ABSTRACT

This work aimed to determine the income and the physical-chemical characteristics of the "Baby Buffalo" (*Bubalus bubalis*) meat, fattened on cultivated pasture on Para State, Brazil. Initially, buffaloes of about 20 months old and the incomes from its carcasses had been evaluated. Samples of tenderloin, rump and round beef for physical-chemical (acidity, pH, protein, fat, cholesterol, humidity, ashes - calcium, phosphorus, magnesium, potassium, iron and zinc), were taken. The physical-chemical analyses indicated that the meat of "baby buffalo" is of excellent quality and great nutritional value, besides the good sanitary conditions for human consumption.

Key words: Amazon, nutritive value, cholesterol, minerals, Murrah buffalo.

INTRODUCTION

The buffalo (*Bubalus bubalis*) is originated from Asia, later to Africa and Europe, arriving in America, in 1895, on Marajo island, Para State, Brazil, and it is alternative for production of meat because of its similarities in nutritional composition to the red and white meats. Its carcass varies in percentages of meat, fat and bones, with lower grade of marbling and has 40% lesser cholesterol, twelve times lesser fat, 10% more mineral, being 55% less caloric and 11% more protein than the bovine. In Amazon region, the expression "baby buffalo" is used for buffaloes abated between its 18 and 24 months of age, weighing alive 400 to 450 kg. The meat has attractive flavor, with little saturated fats and cholesterol, being commercialized in Belem, Para State, Brazil, with good acceptance, useful in the prevention of cardiovascular diseases. The objective of this work was to evaluate the carcass income and the physical-chemical characteristics of "baby buffalo" meat fattened in *Brachiaria humidicola*, to get information on the quality of this product and its resultant economical valorization.

MATERIAL AND METHODS

Were used "baby buffalo" of the Murrah race, fattened in *Brachiaria humidicola*, in Bonito, Para State, Brazil, abated until 20 months, with jejunum of food and diet water (Figure 1). Had been gotten date (1) of the carcass characteristics and corporal composition (Figure 2 and 3).

The analyses physical-chemical of the "baby buffalo" meat were realized in the Laboratorio de Enginnering of Federal University of Para - UFPA e Maues Foods, in Belem, Para State, Brazil.

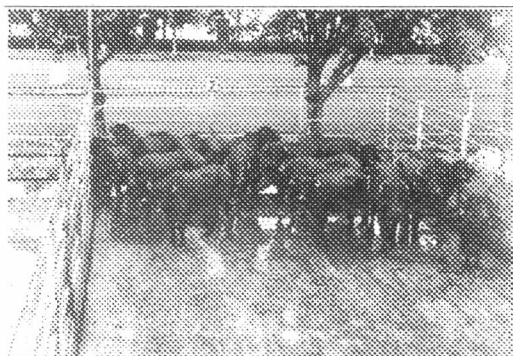


Figure 1. "Baby buffalo" before slaughter.

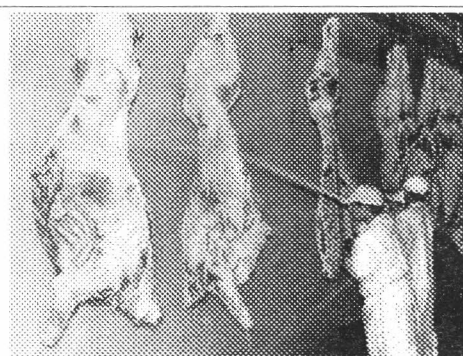


Figure 2. "Baby buffalo" carcass.



Figure 3. Evaluation of "baby buffalo" carcass.

RESULTS AND DISCUSSION

The averages of characteristics and carcasses composition of "baby buffalo" (Table 1) is similar to the literature (4) and ranges from type C - Regular to type B - Good. In Table 2 are the contents of humidity, lipid, protein, ash, carbohydrate and caloric value of the meat. The humidity contents are lower than the buffalo meat present in literature (3).

Table 1 - Characteristics and composition of "baby buffalo" carcass.

Parameter	Average
Weight of hot carcass	197.00
Weight of cooled carcass	189.20
Fat of covering (cm)	2.00
Area of sirloin eye (cm ²)	86.00
Length of carcass (cm)	130.10
Meat (%)	71.10
Bone (%)	20.80
Fat (%)	8.10
Relation of meat/bone	3.42

Table 2 - Composition physical-chemical of "baby buffalo" meat.

Meat type	Humidity (%)	Lipid (%)	Protein (%)	Ash (%)	Carbohydrate (%)	Caloric value (cal)
Tenderloin	73.44	1.87	20.11	1.05	3.53	111.39
Ruond beef	72.35	0.14	18.73	1.09	7.69	106.94
Rump	71.11	0.15	19.88	1.20	7.66	111.51

Data in the United States indicates 1.8 % of lipid in the meat of buffaloes, similar to the one determined on the tenderloin of this work, while other (6) notice value 0.81 % of lipid, proving that this meat possess minor fat level, probably due to its alimentary habit, consuming bigger amount of fodder, differing from others animals created, even in confinement, with raised protein levels and energy (8). The level of ashes are similar to the noticed by literature (8) in buffalo meat, while protein are inferior to the meats of buffalo related by (7) and next to the ones noticed in other research (3), that observed similar ashes levels to the ones in this work in tenderloin, round beef and rump. The value of carbohydrate is not mentioned in the literature and tables of analysis of chemical composition of meat. The caloric value of the meat of "baby buffalo" is little lesser than the (7), of 131 calories, in bubalino meat, suggesting that the buffalo meat and, mainly of "baby buffalo", possess minor caloric levels than the bovine meats, being probable its indication as alternative in the composition of more healthful diets for the population. The cholesterol average determined in rump of "baby buffalo" was of 60 mg/100g, similar to the determined by (7), of 61 mg/100g, while in bovine meat was of 90 mg/100g. The average levels of phosphorus, calcium, magnesium, potassium, iron and zinc, in meat of "baby buffalo" were, respectively, 264.5; 1.27; 32.24; 310.8; 1.53; e 1.55 mg/100g. The phosphorus are superior to the ones observed in other work

(2). In buffalo meat (2), related superior values of calcium and iron and similar of potassium. These results prove the good physical-chemical quality of the "baby buffalo" meat. The animals presented good income, considering age, weight, percentages of meat, fat and bones, relation meat versus bones and area of sirloin eye. The meat of "baby buffalo" it is of exceptional quality because of its low levels of lipid and cholesterol, besides its lower caloric value, being suggestive its indication in the composition of more healthful alternative diets. The product has protein and minerals levels similar to the ones of the meats of traditional consumption (bovine and chicken) in Brazil.

REFERENCES

- (1) FELÍCIO, P. E.; PICCHI, V.; CORTE, O. O. (1979). **Sistematização de avaliação final de bovinos e bubalinos**. II. Composição de carcaça. Campinas: ITAL. Centro de Tecnologia da Carne. (ITAL-Centro de Tecnologia da Carne. Boletim Técnico, 3), p. 33-66.
- (2) FRANCISCIS, G.; MORAN, J.B. (1991). Meat production from river buffalo. **World Review Animal Production** 26 (4): 65-71.
- (3) JOKSIMOVIC, J.; OGNIJANOVIC, A. (1977). Comparison of carcass yield, carcass composition and quality characteristics of buffalo meat and beef. **Meat Science** 1: 105-110.
- (4) LOURENÇO-JUNIOR, J.B. (1998). Variáveis produtivas, fisiológicas e de comportamento de zebuínos e bubalinos e fatores do ambiente físico em pastagem cultivada da ilha de Marajó. Belém: UFPa. Tese Doutorado. 187p.
- (5) SALES, J. **Nutritional quality of meat from some alternative species**. (1995). *World Review of Animal Production* 30 (1-2): 48-55.
- (6) SHARMA, N.; GANDERMER, G.; GOUTEFONGEA, R.; KOWALE, B.N. (1986). Research note: fatty acid composition of processed seal meat. **Canadian Institute Food Science Technology Journal** 24: 269-272.
- (7) USDA. (1986). **Composition of foods: Beef products**. United States Department of Agriculture, Washington, DC, USA. Handbook 8-13.
- (8) ZIAUDDIN, K.S.; MAHENDRAKAR, N.S.; RAO, D.N.; RAMESH, B.S.; AMILA, B.L. (1994). Observation on some chemical and physical characteristics of buffalo meat. **Meat Science** 37: 103-113.