

MICROBIOLOGICAL AND SENSORIAL EVALUATION OF THE CHARACTERISTICS OF SUN MEAT ELABORATED WITH SECONDARY CUT OF "BABY BUFFALO"

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ABSTRACT

This work aimed to determine the microbiological and sensorial characteristics of the "sun meat" elaborated with secondary cut of "baby buffalo" (*Bubalus bubalis*) of about 20 months old. The product was elaborated out the addition of 10% of salt, placed by 17 hours and after 17 hours extended in room with temperature of 20°C. The microbiological analysis (total and fecal coliforms, *Stafilococos aureus* and *Clostridium botulinum*) were removed, in Belem, Para State, Brazil. The sensorial analysis of the derived was realized in the Center of Science Natural e Tecnology of the University of Para State, with trained and not trained students. The "sun meat" presented excellent microbiological characteristics. The not trained indicated preference 88% and the trained 71%, 79%, 81% and 86%, respectively, for color, smell, flavor and texture.

Key words: Amazon, coliforms, salmonella, clostridium.

INTRODUCTION

In Brazil the typical salty meats, sun meat and its succedaneum are products widely consumed in the most varied forms, because of its high caloric and protein value being well appreciated by its sensorial characteristics. The sun meat originally was manufactured with the intention to extend its durability, as well as facilitating the operations of cutting and the its commercialization. With distinct characteristics in the form and appearance, the sun meat is very appreciated and considered as a substitute product of the fresh meat, which keeps almost all its properties. Because the disobedience to the minimum requirements of sanitary aspects, it deserves the attention of the authorities aiming to avoid risk to the consumers efforts health are necessary to adopt modern techniques of abates, compatible hygienic-sanitary procedures, better technology of manufacture, adequated installations aiming the final product and its distribution, involving special packing that assures its integrity, to protect the basic characteristics of the product (2). In the State of Para, the studies on microbiological and sensorial characterization, and viability of formularization, elaboration, conservation and durability of the products processed from the meat of buffaloes are reduced, such as sun meat, aiming technology transfer, allowing to stimulate the processing industry of Amazon. The objective was to evaluate the microbiological and sensorial characteristics of sun meat elaborated with secondary cut of "baby buffalo", proceeding from animals fattened in cultivated pasture, aiming to add value to this product.

MATERIAL AND METHODS

Were used "baby buffalo" meat of the Murrah race abated with 20 months of age, after 24-hour hydric diet. After 48 of cooling, to the temperature of 0 to 2°C, the carcasses were boned for separation of the primary and secondary cuts. The derivative was elaborated with meat of the secondary cut.

The meat was cut in blankets and placed in basket where 10% of grounded salt were added at few, in a process of rubbing. After that, the meat was placed in pile of cure for 17 hours and after extended in room with temperature of 20° C for more 17 hours. After the drying process the sun meat was weighed and packed in plastic bag and conditioned in refrigeration. The microbiological analyses of the sun meat was carried in the Laboratory of Chemical Engenieer of the Federal University of Para, in Belem, Para State. The sensorial analyses were made in the Food Laboratory of the Center of Science Natural and Technology of the University of Para State. As tasters were used pupils of the UEPA, being 33 no-trained and 11 previously trained, using Hedonic Scale of nine points, which varies since "like it very much" (9 points) until "don't like it" (1 point) (5). The trained tasters used this scale to consider the attributes of smell, color, flavor and texture of the product, while the not trained, only the general acceptance (Figure 1).



Figure 1. Sensorial evaluation of the sun meat elaborated with secondary cut of "baby buffalo".

RESULTS AND DISCUSSION

The results of the microbiological analysis of total and fecals coliforms, "*Stafilococcus aureus*" and *Clostridium botulinum* of the sun meat elaborated with secondary cut of "baby buffalo" are in Table 1.

Table 1 - Microbiological evaluation of the sun meat of "baby buffalo".

Product	Totals coliformes (NMP/g)	Fecals coliformes (NMP/g)	<i>S. aureus</i> (in 25 g)	<i>C. botulinum</i> (in 25 g)
Sun meat	Absence	Absence	Absence	Absence

For microbiological food evaluation for which specific standards do not exist, the product is acceptable for consumption under microbiological point of view, when the coliforms are on the allowed maximum limit of 100 NMP/g (4). The microbiological analyses of the sun meat, concerning to the total and fecal coliforms, demonstrated that the derived product satisfies of the sanitary specifications. The level of total coliforms is used to evaluate the hygiene conditions, and when are found in foods they denounce contamination occurred during previous processing, deficient cleanness and hygiene, or proliferation during processing or storage (6), what did not happen in the elaboration of the derivative on this work, indicating it to be commercialized for human consumption. Fecal coliforms indicate fecal contamination, due to the high ratio of *Entamoeba coli* (responsible for gastroenteritis in children and old people), whose habitat is the human intestine and of animals, and indicate low level of hygiene (1). The derivatives used in this work were elaborated according to hygiene standards, including use of bactericidal for cleaning of the equipment, utensils and packings used for the storage of the product. The sun meat did not developed *Clostridium*, indicating that the product was in perfect conditions for human consumption. Table 2 shows the results of the sensorial evaluation of the sun meat. It is observed that the average of acceptance of the derivative for not trained tasters was 7.93, considered high, being the average 8 the one more repeated, what is considered as "like it very much". This fact proves the great acceptance of the sun meat. Moreover, its high caloric and protein level and also its sensorial characteristics makes it vastly consumed in all Brazil.

Table 2 - Sensorial evaluation of the sun meat of “baby buffalo” for not trained tasters.

Product	Average	Mode
Sun meat	7.93 (\pm 0,62)	8

The evaluations of the attributes tech as color, smell, flavor and texture of the sun meat by the trained tasters are in Table 3.

Table 3 - Sensorial evaluation of the sun meat of “baby buffalo” for trained tasters.

Characteristic	Average	Mode
Color	6.4 (\pm 1,92)	5 e 9
Smell	7.1 (\pm 1,72)	8 e 9
Flavor	7.3 (\pm 1,42)	6
Texture	7.7 (\pm 1,61)	9

With regard to color of the meat the trained tasters indicated average of 6.4, with more repetition of 5 and 9 points, what means in the hedonic scale that the tasters attributed between “like it slightly” and “like it regularly”. In relation to smell the tasters attributed average 7.1 and equal fashion 8 and 9, what means between “like it very much” and “like it regularly”. Related to flavor the trained tasters determined average 7.3 and equal fashion 6, what means in the scale hedonic “like it very much” and “like it regularly”. In relation to the texture the trained tasters chosen average 7.7 and equal fashion 9, what represents in the scale hedonic “like it very much” and “like it regularly”. The secondary cut of “baby buffalo”, of lower value in the commercialization, can be used for the sun meat preparation, resulting in one derivative of excellent sensorial characteristics, besides high microbiological quality, what can be used for human consumption. It is a product of relatively reduced cost of production, what allows the producer to get about 50 % of net profits, consisting in alternative of income profit, through the aggregation of the secondary cut value. The residue also can be useful in the elaboration of ingredient for animal ration, increasing the profit.

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