

MICROBIOLOGICAL AND SENSORIAL CHARACTERISTICS OF "BABYBURGER" ELABORATED WITH SECONDARY CUT OF BABY BUFFALO

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ABSTRACT

Were aimed the income and the characteristics of "babyburger" elaborated with secondary cut of baby buffalo (*Bubalus bubalis*) with about 20 months old. Were added in 5.570 g of meat the following ingredients: 1.81 % salt, 1 % sugar, 0.5 % monosodium glutamate (flavor relief), 8 % bread trituated toasted, 10 % onion, 0.36 % garlic, 3.62 % hydrogenated vegetable fat, 0.9 % vegetable oil and 0.9 % egg. Was made the molding of the product and storage under cooling in freezer. Microbiological analysis (total and fecal coliforms, *Salmonellas*, *Stafilococcus aureus* and *Clostridium botulinum*) were elaborated in Belem, Para State, Brazil. The sensorial analysis was realized with tasters trained and not trained. The microbiological analyses indicated that the product is of excellent quality for human consumption. The test indicated that the "babyburger" it was accepted from 80 % to 95 % ("liked very much").

Key words: Amazon, buffalo meat, food technology, meat flavor

INTRODUCTION

With the world-wide search trend for healthful food, the buffalo meat, mainly of "baby buffalo", also called meat "light", possessing 55 % less calories, 40 % less cholesterol and flavor similar to the bovine one has called the interest of the population of the celebrity (4). On the other hand, the microbiological aspects of foods are of great importance and must be observed in the production of meat derivatives. Must be considered the *Salmonellas* by causing serious problems of human health being and the microorganisms of the genus *Escherichia*, *Enterobacter*, *Citrobacter* and *Klebsiella*, that form the group of the coliforms, whose habitat is the intestine of man and of domestic animals. The total coliforms indicate inadequate hygiene and contamination after processing, deficient cleaning practices and sanitation, or proliferation in processing and/or storage. The fecal coliforms characterize fecal contamination, by the light ratio of *Entamoeba coli*, and provoke gastroenteritis in children and aged (2). Other point of prominence in foods or derived is its organic characteristic, what indicates the attraction that these exert on the human beings, in view of that its act through the system of multiple stimulations. By aspect, consistency and smell, in minor or greater intensity occur stimulate on the senses of vision, hearing, smell and taste, which produce reactions that vary from desire to rejection. The consumer evaluates and attributes, through these sensations, the level of the organic quality of the food. The objective of this work was to evaluate the microbiological and sensorial characteristics of "babyburger" elaborated with secondary cut of "baby buffalo", proceeding from Para State, Brazil and fattened in cultivated pasture, to add value to this product.

MATERIAL AND METHODS

Was used the secondary cut of meat, proceeding from "baby buffalo" raised and fattened in cultivated pasture until about 20 months of age. After weighing in the farm the animals were transported in truck to the slaughter house, where were slaughtered for posterior bone and

separation of the primary and secondary cuts. For preparation of “babyburger” were used 13 kg of secondary cut meat. Initially the meat was boned and after that, the preparation was initiated with the cleaning of the meat. Later, the cleaned meat was grounded for addition of the following ingredients: 1.81 % salt, 1 % sugar, 0.5 % monosodium glutamate (flavor relief) 1.8 % grounded toasted bread, 10 % onion, 0.36 % garlic, 3.62 % hydrogenate vegetal fat, 0.9 % vegetal oil and 0.9 % egg with white and yolk. The onion and the garlic were previously centrifuged. After mixing the meat and the ingredients, was made the molding in domestic hamburgerer. Later, the “babyburger” were packed in plastic bag, conditioned in plastic basket and stored in freezer, where were kept under 4°C freezing , until the accomplishment of the sensorial test (Figure 1).



Figure 1. Sensorial test of “babyburger” by tasters.

The microbiological determination were effected in the “babyburger”, in accordance with the standards demanded by the current law (1), about coliforms fecal and *Salmonella*, according to the methodology described in literature (5). Also was analyzed to determine the presence of *Stafilococcus aureus* and of *Clostridium botulinum*. The microbiological analyses were carried out in the Laboratory of Chemical Engeniree of the Federal University of Para, in Belém, Para State. The sensorial analyses were made in the University of Para State, with pupils of this Institution, being 33 not trained and 11 previously trained, using Hedonic Scale of nine points, which had varied since “like it a lot” (9 points) until “unlike it a lot” (1 point). The trained tasters used this scale to consider the attributes smell, color, flavor and texture of the product, while the not trained, only the general acceptance.

RESULTS AND DISCUSSION

For microbiological food evaluation to which specific standards do not exist, the product is acceptable for consumption under the microbiological point of view when the *Salmonella*, *Staphylococcus* and *Clostridium botulinum* are absent in 25g. The allowed maximum limit for total and fecal coliforms is of 100 NMP/g (3). The microbiological analyses of the “babyburger”, regarding to total and fecal coliforms, demonstrate that the derivative meets the specifications. In this derivative, also there was no development of *Salmonellas*, *Stafilococcus* and *Clostridium botulinum*, what indicates that the product meets perfects conditions for human consumption. The derivatives used in this work were elaborated on the hygiene standards, including the use of bactericide for sanitation of the equipment, utensils and packs used for storage of the product. On Table 1 it is observed that the average of acceptance of the derivative by not trained tasters was of 8.16, or 91 % of acceptance, considered high, being average 9 the one that more happened again, what is considered as “like it a lot”.

Table 1 - Sensorial evaluation of “babyburger” by not trained tasters.

Product	Average	Mode
“Babyburger”	8.16 (± 0.93)	9

This fact proves the great acceptance of this derivative. Moreover, its high caloric value, protein and also its sensorial characteristics makes it a product with great possibilities of being consumed in Amazon region. With regard to the color of the meat the trained tasters indicated average of 7.11, with higher repetition of 7 points, what means in the hedonic scale that the tasters attributed “like it regularly”, or 80 % of preference. In relation to the smell the trained tasters attributed average of 7.78 and mode 8, what means between “like it regularly” and “like it a lot”, or 86 % of acceptance. Related to the flavor the not trained tasters determined average of 8.56 and mode 9, wants means in the hedonic scale “like it” and “like it a lot”, or 95 % of choice (Table 2).

Table 2 - Sensorial test of “babyburger” by trained tasters.

“Babyburger”	Characteristic			
	Color	Smell	Flavor	Texture
Average	7.11 (± 0.93)	7.78 (± 0.97)	8.56 (± 0.53)	8.22 (± 0.83)
Mode	7	8	9	9

In relation to the texture the trained tasters choose average of 8.22 and mode 9, what represents in the hedonic scale “like it” and “like it a lot”, representing 91 % of preference. The secondary cut of “baby buffalo” can be used in the elaboration of “babyburger” of excellent organoleptic characteristic. The high microbiological quality of the productive indicates it to human consumption. The elaboration cost is relatively low and its production is alternative of income generation, through the aggregation of value to the meats of secondary cuts. The residue can be used as fertilizer, increasing the profit.

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