

MICROBIOLOGICAL AND SENSORIAL CHARACTERISTICS OF MORTADELA ELABORATED WITH "BABY BUFFALO" MEAT AND FINE HERBS

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ABSTRACT

This work aimed to determine the microbiological and sensorial characteristics of the "mortadela" elaborated with secondary cut of "baby buffalo", in Para State, Brazil. The product was elaborated through the meat (95%) trituated in "cutter" with bacon (5%), condiments and fine herbs in manual laying, using artificial gut. Was not observed development of microorganisms. The average of acceptance was 8,2, considered high, with acceptance of 91%. The secondary cut of "baby buffalo" meat, can be used for joining value to buffaloes meat. The excellent microbiological condition and high acceptability, turning that product alternative of generation of income for the producer.

Key words: Amazon, by products, *Clostridium*, food technology, *Salmonella*.

INTRODUCTION

With the world tendency for the search of healthy food the buffaloes are more popular in Brazil. The great new is "baby buffalo", that in Para State is the animal, which arrives to the between 18 and 24 months of age, and with 450 to 500 kg of weight. Its meat has attractive flavor and contains less saturated fats and cholesterol, being indicated for all ages (3). In Belem, para State, Brazil, informal data aim a consumption of this meat about 10-15%. In Soure, Marajo island, Para State, this consumption approaches 90%, what means good acceptance of the consumers and consequently an alternative source of healthier meat (9). In Brazil, the consumption of built-in products is increasing, being considered an increase around 45%. This change, is function of an amplification of the market, that now is formed by a consuming public even more demanding with respect to the quality of the product, tendency that has being observed in several sections, from the most popular to the most sophisticated (6). Actually, the consumers' interest in products with less calories has been pressing the food industries to explore ways to reduce the fat in the products elaborated for commercialization for reduce the calories contained in these products (2), what motivates the research in the use of the buffaloes meat. The present work has an objective of evaluate the microbiological and sensorial characteristic of "mortadela" elaborated with fine herbs of "baby buffalo" meat, coming of animals fattening in cultivated pasture.

MATERIAL AND METHODS

For preparation of the "mortadela" (5) with fine herbs was used 3 kg of "baby buffalo" meat, using a secondary cut. The meat (95%) was trituated in "cutter", for one minute, with bacon (5%). After that, in the preparation was added salt (1%), condiment for "mortadela" (1%), krakoline E (0.35%), other additives (1%) and water (2.5%). After the absorb of the water, was added carragene (0.6%) and more water (2.5%). Later, was mixing in "cutter" the rest of ingredients: hungarian power (0.35%), fixed A-80 (0.25%), garlic (0.3%), paprika (0.5%), white pepper (0.2%) and fine herbs (0,25%), until it reaches the aspect calls wanted, and carried out its inlaying, in manual inlayer, using artificial gut. After that, it was taken to cure in vertical refrigerator for one hour. The cooking of the product was made in oven beginning with 60°C for one hour and finishing with 90°C for approximately more one hour. The product was cold in water during approximately 30 minutes, until reaching an internal temperature of 27°C. After the cooling the product was vacuum packed and kept in refrigerator (5°C). The microbiological analyses took place in the Laboratory of

Chemical Engineering of the Federal University of Para State - UFPA, in Belem, Para State, Brazil (7). The sensorial analyses were made in the Laboratory of Sensorial Analyses of the UFPA, in which were used 30 testers not trained, using Hedonic Scale of nine points (4). The method applied that varied since "like it a lot" (9 points) until "unlike it a lot" (1 point) (Table 1).

Table 1 - Card use for sensorial analysis

Hedonic scale	
Name:	
Product: "Mortadella"	Date:
Evaluate that sample, using the scale down for describe how did you like and didn't like of the sample.	
Sample 01	Sample 02
<input type="radio"/> Liked very much	<input type="radio"/> Liked very much
<input type="radio"/> Liked much	<input type="radio"/> Liked much
<input type="radio"/> Liked moderate	<input type="radio"/> Liked moderate
<input type="radio"/> Liked slightly	<input type="radio"/> Liked slightly
<input type="radio"/> Indifferent	<input type="radio"/> Indifferent
<input type="radio"/> Didn't like slightly	<input type="radio"/> Didn't like slightly
<input type="radio"/> Didn't like regularly	<input type="radio"/> Didn't like regularly
<input type="radio"/> Didn't like much	<input type="radio"/> Didn't like much
<input type="radio"/> Didn't like very much	<input type="radio"/> Didn't like very much

RESULTS AND DISCUSSION

The results of the microbiological analysis of total and fecal coliforms, *Clostridium botulinum*, *Staphylococcus* and *Salmonellas* of the "mortadela" with fine herbs are in the Table 2.

Table 2 - Microbiological evaluation of "mortadela" with fine herbs.

Microorganism	"Mortadella" with fine herbs
Total coliforms (NMP/g)	Absence
Coliforms at 45°C (NMP/g)	Absence
<i>Staphylococcus</i> (in 25 g)	Absence
<i>Salmonellas</i> (in 25 g)	Absence
<i>Clostridium botulinum</i> (in 25 g)	Absence

The microbiological analyses demonstrated that the derived product of "baby buffalo" meat are inside of the specifications recommended by the Sanitary Surveillance (1). The indexes of total coliforms and coliforms at 45°C indicate the hygienic conditions in the elaboration of the product and if they were found in food they demonstrate contamination during pre-processing, cleaning and faulty sanity (8), cause they were not found in the product it indicates good microbiological quality. Microorganisms as, *Salmonella*, *Staphylococcus* and *Clostridium botulinum* can be developed during the processing, storage and inadequate transport, could being serious risks to the human health. In that derived, the development of those microorganisms was not observed, what characterizes that the product was in perfect conditions for the human consumption. In the Table 3 they are the results of the sensorial analysis of the "mortadela" with fine herbs, it is observed that the average of acceptance was 8,2, considered high, being 9 the note that more repeated.

Table 3 - Sensorial evaluation of "mortadella" with fine herbs.

Product	Average	Mode
"Mortadela" with fine herbs	8.2 (\pm 0.73)	9.0

That fact checks the great acceptance of the "mortadela" of 91%. The secondary cut of "baby buffalo" meat, can be used in the elaboration of "mortadela" and others meat derived joining value to that cut, fact checked by its excellent microbiological condition and high acceptability, turning that product in order to be industrialized, being constituted an alternative of generation of income for the producer.

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