

## Obtaining meat specialties in seed crusts

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### Abstract

The present study is designed to determine the microbiological load of a thermally prepared meat product - turkey roll with mint and cashew nuts.

The motivation of choosing this theme, would be that it's a subject very important for our health, because eating has a very important role in life. The meat industry is increasing in a great and continuous development, nowadays it has a wide range of technological possibilities to harness certain types of meat, but also by the evolution of techniques that contributes to the quality of the finished product offered to the consumer.

Statistics show an increasing percentage of the world's population who chooses to consume meat as a basic food, so nutritionists urge us to consume 25 grams of animal fat daily and 150 grams of meat. Nutritionists and dieticians claim that from all kinds of meat, the turkey contains the lowest amount of cholesterol. Among the first foods in the healthy food recommendation list is turkey meat, which is a rich source of protein, vitamin B and zinc, and has a low fat content [6].

In order to manufacture any type of food product, the hygiene conditions must be observed throughout the manufacturing process in order not to risk contamination of the product. This is very important and must be respected. Thus, the microbiological parameters that have been determined in this product are: the total number of coliform germs and the total number of germs belonging to the *Staphylococcus aureus* species. The microbiological exam provides useful information about the quality and sanitation of the analyzed product.

**Keywords:** meat, turkey, mint, cashew, coliforms, *E.coli*, *Staphylococcus aureus*.

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### 1. Introduction

Nutrition is the process that affects our health, it is said that "eating is a vital habit that not only keeps us alive, it makes us feel alive" (Nicolae Hâncu – Abecedar de nutritie) [2]. Each of us benefit from the free choice of education for this process.

The food we decide to consume must achieve a caloric and nutritional stability. We all need to know how to feed ourselves well, but moderately. Often we are the target of gastronomic temptation and the consequence of this temptation can lead to an exaggerated contribution of nutritional factors, all because of the lack of self-control in

alimentation. The turkey meat, being a good source of calcium, B vitamins, iron, selenium, zinc, magnesium, potassium, is recommended for proper functioning of the nervous and cardiovascular system [7, 8]. Turkey's meat is among the healthiest types of meat. Turkey's meat is increasingly in the consumer's attention, due to its low fat, high protein content and nutrients. It is indicated for people suffering from diabetes, because the glycemic index of this type of meat, has a low value. These are some of the considerations for which we have been focusing on this type of product to develop this work.

## 2. Materials and Methods

Upon reception of the raw material (turkey breast), a control over the organoleptic characteristics must be carried out. For this purpose, the appearance of skin, fat and muscles should be considered. In the case of fresh meat, the skin must have a white to yellowish color, a clean surface with a characteristic smell. The color of the internal and external fat must be white, slightly yellowish and free from foreign smells. The muscles should be elastic, compact and dense with a specific color. Cleaning consists of boning the turkey breast and removing the fat and skin covering the chest. In the next stage the slices obtained are seasoned with salt, sage, mint and honey. Spices are used to give the product a more pleasant flavor, taste and smell. Salt is also used to preserve and increase the moisturizing capacity of the meat, but it also improves the taste [1].

Maturing takes between 8 and 12 hours and is applied to ensure good spice infiltration in muscle fiber, the decreasing of muscle fiber resistance, and absorption of salt and water.

While turkey meat and spices are left to mature, the cashew nuts are prepared. In a mortar, put the walnuts and crumble as small as possible.

After maturation, the breast slices lie on a trencher and the cashew nuts are sprinkled on them. The chest rolls along with the cashew nuts and fixes the result with a string. Place the roulade in a tray that can be covered and inserted it into the preheated oven. Baking should be done at 260°C for 40 minutes. After baking, allow the prepared food to cool until it reaches room temperature, in order to make the crust. Making the crust is done in the following way: Cool chilled pasta with honey and sprinkle on all sides with pressed cashew nuts mixed with dry mint. Bake for 5-10 minutes at 150°C to get the chicken crust. The roulade should be cooled for wrapping and then stored at a refrigeration temperature of 0-4°C. Throughout all the technological flow, the hygiene terms must be met in order to avoid contamination of the product. The microbiological parameters that have been determined in this product are:

- Total number of coliform germs
- The total number of germs belonging to *Staphylococcus aureus*
- Samples were taken from the product to be analyzed for bacteriological analysis.

- Samples in the preparation should include both the surface layer and the deep layer.

In order to determine the microbiological indicators, respectively the number of coliform germs and the presence of *Staphylococcus aureus*, the harvested samples were prepared as follows: 1 gram of product weighed and grated. Over this sample, 9 ml of water was added and homogenized for 1-2 minutes. For each type of microorganism in question - colloidal twins and staphylococci - 1 ml of the suspension obtained with a sterile pipette was taken and discharged into two Petri dishes for each of the microorganisms. It is advisable to do the sowing as soon as possible after the dilutions have taken place [3, 4]

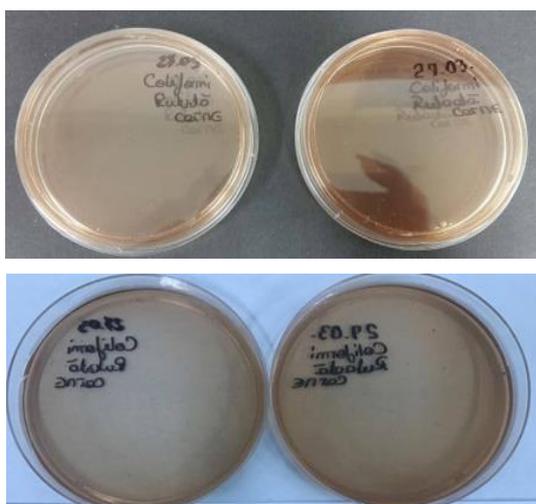
For the purpose of bacteriological analysis, the specific protocol for the identification of each of the target germs must be respected. In all cases, seeding is carried out by embedding, and after the samples have been homogenized, they are allowed to cool and solidify under aseptic conditions in the vicinity of the gas bulb. For pet germ development, Petri plates are placed in the thermostat at 37 ° C for 24 hours with the lid down. If no specific germs were developed in the plates after 48 hours, the plates are sterile, leave another 24 hours. If no platelet specific germs have developed after 48 hours, the product is sterile for the verified germ. All evaluations were done in duplicate.

## 3. Obtained results

In the identification of the species of microorganisms envisaged, standardized working methods were used. The number of coliforms and coagulase-positive staphylococci, respectively, in the case of meat products must not exceed 10 germs / gram of product, according to Order 975/1998 of the Ministry of Health [5].

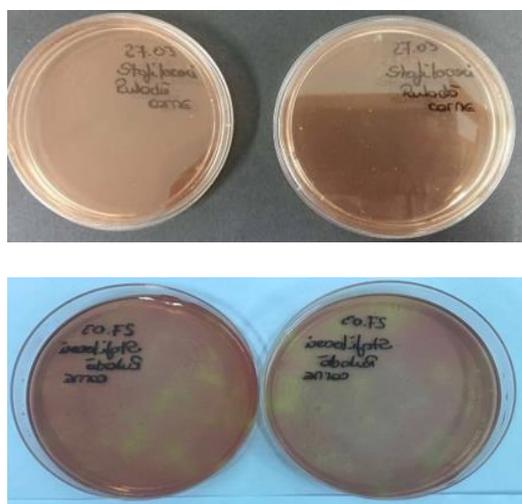
Taking into account the results of the microbiological analyzes, we can state that the product obtained and analyzed by us - the meat roll with cashew nuts and mint, respects the norms in force, falling within the legislative limits.

Regarding the presence and number of coliform germs, which are indicators of food fecal contamination, they were absent from the analyzed product.



**Photo 1.** Illustrates the appearance of the culture medium - ADCL, immediately after seeding and 24 hours after thermostation - noticing the absence of coliform.

Observing the Petri plates with the Chapman culture medium, selective medium for the development of coagulase-positive staphylococci, it was found that on 24 hours of thermostation, an average of 7 colonies of staphylococci developed, corresponding to 7 germs / gram of product. The images below highlight these findings.



**Photo 2.** Appearance of the Chapman culture medium immediately after seeding and appearance of specific colonies of staphylococci 24 hours after introduction into the thermostat

In view of the results obtained, we can say that the turkey meat roll with mint and cashew nuts is falling, from a microbiological point of view, in the category of healthy food and safe for the health of the consumer.

#### 4. Conclusions

- Meat roll with cashew nuts and mint is a product that captures the consumer both in appearance, smell and taste and flavor.
- Fecal contamination indicators in the product we obtained - total coliforms and Escherichia coli, were absent.
- Coagulase positive staphylococci were identified on average as 7 / gram of product, the maximum admissible limit being 10 germs / gram
- We can say that the meat roll with cashew nuts and mint fall into the category of healthy food and safe for the health of the consumer.

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**Compliance with Ethics Requirements.** Authors declare that they respect the journal’s ethics requirements. Authors declare that they have no conflict of interest and all procedures involving human / or animal subjects (if exist) respect the specific regulation and standards.

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