

RESEARCHES REGARDING THE PHYSICAL AND CHEMICAL CHECKING OF THE FRESH MEAT PRODUCTS

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Abstract

The paper present the results obtained after the physical-chemical test in order to appreciate the integrity of the following meat products from the fresh food group are presented in this study: frankfurter, pork sausage, Polish sausage, fresh sausage, liverwurst. The water, NaCl and the nitrites were analyzed. The water determination was made by drying in the drying chamber at a temperature of 105°C for 4-5 hours. In the samples taken under study the amount of water has medium values of: 58,31% in frankfurters, 63,56% in sausages, 61.13% in Polish sausages, 57.32% in fresh sausages, and 61,37% in liverwurst. The quantity of NaCl varies between 1,45% in fresh sausages and 2,91% in Polish sausages, with an average value of 2,18 in Frankfurter, 1,97% in sausage, 2,24% in Polish sausages, 1,86% in Fresh sausages and 1,91% in Liverwurst. The quantity of nitrites used to prepare meat products has the following medium values: 2.86 mg/100 g product in frankfurter, 2.26 mg/100 g product in sausage, 2.71 mg/100 g product in Polish sausage, 1.59 mg/100 g product in fresh sausage, and 0.21 mg/100 g product in liverwurst. The samples under study range within the standard limits from the physical-chemical point of view.

Key words: meat products, physical-chemical determination, quality

INTRODUCTION

The quality of food products represents a particularly important factor, having profound implications, because feeding underlies to the bottom of life itself and determines the development of metabolic processes and has considerable influence on the development of the human body.

The amount of food products is determined, the first, by the caloric value, but by their gustative qualities, the degree of assimilation and their hygienic-sanitary value.

Achieving qualitative corresponding indexes for various food products depends on several factors, namely: the quality of raw materials used, the processing activity, the degree of competence of workers, etc.

The control of the quality in all food branches must have a preventive role, which consists in prevention not to obtain defective quality products, but at the same time having an active role, in order to obtain products with high quality characteristics.

MATERIAL AND METHOD

The results obtained after the physical-chemical test in order to appreciate the integrity of the following meat products from the fresh food group are presented in this study: frankfurter, pork sausage, Polish sausage, fresh sausage, liverwurst. The water, NaCl and the nitrites were analyzed. The water determination was made by drying in the drying chamber at a temperature of 105°C for 4-5 hours

The determination of sodium chloride was made by Mohr's method. In the aqueous extract obtained from the sample product under study, the ions of chlorine are titrated with a silver nitrate solution (AgNO_2), in the presence of potassium chromate used as an indicator.

The determination of the nitrites was made by Griess method, which consists in measuring the color intensity of the pink color in the nitric compound formed as a result of the reaction between nitrates in the aqueous deproteinized extract and the Griess reagent.

A number of 18 samples of frankfurters, 15 samples of Polish sausages, 15 samples of sausages, 10 samples of fresh sausages, 12 samples of liverwurst were taken into analysis.

RESULTS AND DISCUSSIONS

In the case of frankfurter samples, the quantity of water ranges between 53,5% - 65%, the maximum limit allowed by STAs being of 67%. In the case of pork sausages, the quantity of water varies between 58% and 67,45, with an average value of 63,56%, being under the maximum limit allowed by STAs (70%). In the case of Polish sausages products the quantity of water varies between 54,4% and 65,85% with an average value of 61,13%, being under the limit allowed by STAs (67%). In the case of liverwurst the quantity of water varies between 51,11% and 68,82%, and in the case of fresh sausages the values varies between 54,02% and 60,8% with an average value of 57,32%, being under the maximum limit allowed by STAs (67%). The results are presented in Fig. 1.

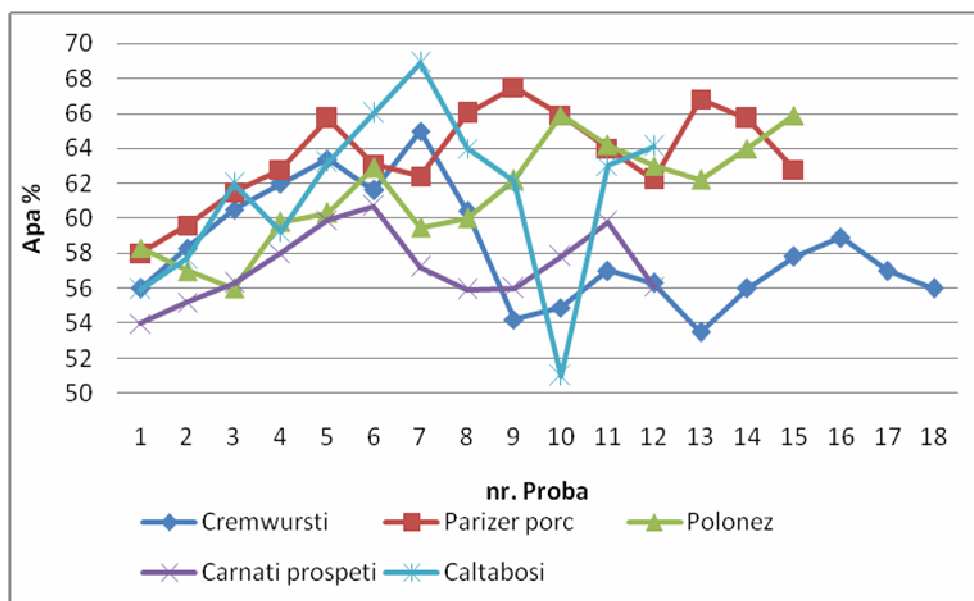


Figure 1. Water content variation in:Frankfurter, Pork sausages, Polish sausages, Fresh sausages, Liverwurst

In the case of sausages the amount of salt varies between 1.5% și 2.81% being under the limit allowed by STAS(3%).In the sample of Pork sausage the values vary between 1.38% - 2.80%, with an average value of 1,97%.In the case of Polish sausage the percentage of salt varies between 1.85% și 2,91% being less than STAS limit (3%). In the fresh sausages products the amount of salt varies between 1.45% și 2.33% with an average value of 1,86%. In the case of liverwurst the average value was of 1,91%, being under the limit allowed by STAS(3%). (Figure 2).

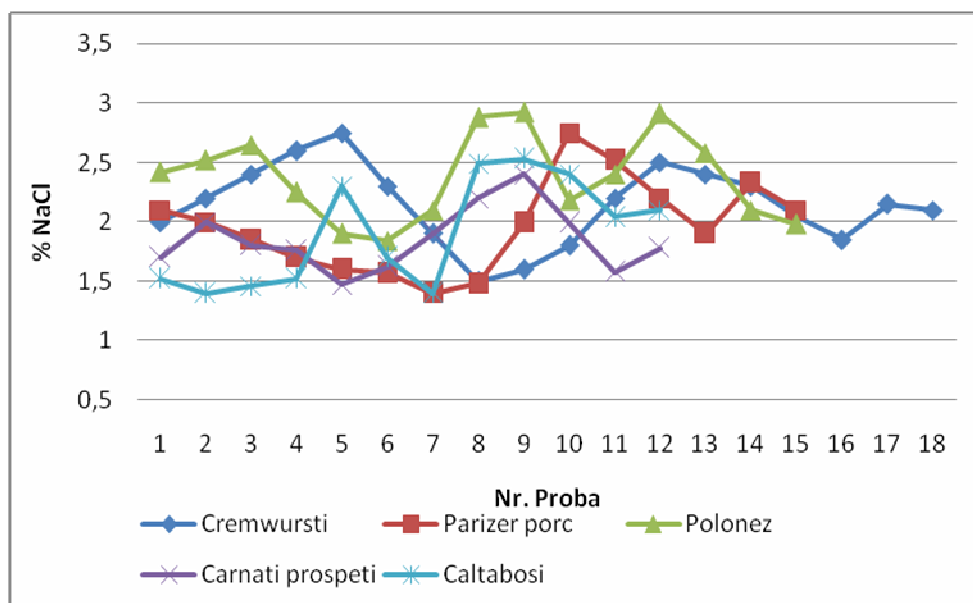


Figure 2. Salt Content Variation (NaCl) in Frankfurter, Pork sausages, Polish sausages, Fresh sausages, Liverwurst

The quantity of nitrites ranges between 1.62 – 4.10 mg/100 g product in the case of sausages. In the case of Pork sausages the quantity of nitrites varies between 1.16 și 3.12 mg/100 g product ,with an average value of 2.26 mg/100 g product. In the case of Polish sausages the quantity of nitrites ranges between 11.25 – 3.95 mg/ 100 g product with an average value of 2.71 mg/100 g product. In the case of Fresh sausages the values ranges between 0.82 și 2.90 mg/100 g product, with an average value of 1.59 mg/100 g product. In the case of Liverwurst the values range between 0.11 – 0.27 mg/100 g product, being under the maximum limit allowed by STAS (7mg/100 g product).(Figure 3).

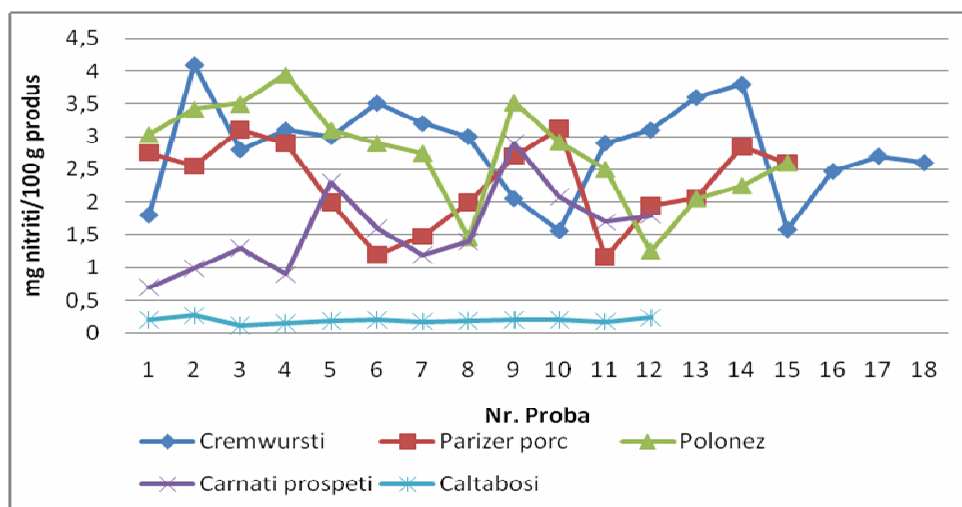


Figure 3. Nitrite content variation in Frankfurter, Pork sausages, Polish sausages, Fresh sausages, Liverwurst

CONCLUSIONS

The following conclusions were drawn at the end of this study:

- In the samples taken under study the amount of water has medium values of: 58,31% in frankfurters, 63,56% in sausages, 61.13% in Polish sausages, 57.32% in Fresh sausages, and 61,37% in Liverwurst.

-The quantity of NaCl varies between 1,45% in fresh sausages and 2,91% in Polish sausages, with an average value of 2,18 in Frankfurter, 1,97% in sausage, 2,24% in Polish sausages, 1,86% in fresh sausages and 1,91% in liverwurst.

- The quantity of nitrites used to prepare meat products has the following medium values: 2.86 mg/100 g product in frankfurter, 2.26 mg/100 g product in sausage, 2.71 mg/100 g product in Polish sausage, 1.59 mg/100 g product in Fresh sausage, and 0.21 mg/100 g product in Liverwurst.

- The samples under study range within the standard limits from the physical-chemical point of view.

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