

## **PHYSICO-CHEMICAL PROPERTIES OF SEMIPRESERVED MEAT PORK BASED ON PARAMETER PROTEIN OF FAT FREE**

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### ***Abstract***

*In the food industry, meat industry occupies a prominent place, meat and meat products can not miss the daily ration for a healthy man, because of high nutrient. Thus, meat and meat products provide physiological and nutritional balance between the main components of food: proteins, fats, carbohydrates and vitamins, while satisfying the requirements of good nutrition, balanced and complex*

**Key words:** P.F.F., aminoacizi

### **INTRODUCTION**

Meat processing industry in our country has experienced a growth in the last three decades, during which new units are in operation and equipped with modern machinery, which apply new technologies, improved to achieve high quality products, competitive world.

The concept of quality we believe, in the case of food of animal origin, a feature all too general and devoid of meaning to acquire health.

The motivation arises from the fact undeniable that food can be a very neat and well proportioned compositional and organoleptic however, is unhealthy and therefore harmful, since the present structure and composition of chemical factors, physical or biological hazardous to food in first line and the consumer second

Continuous improvement of manufacturing technology and diversification of meat production greatly influences the quality of meat and meat products. Manufacture products with superior quality characteristics is particularly important for the population needs to increase economic efficiency and to ensure the competitiveness of export goods.

To achieve high quality products which meet the requirements and at the same time to avoid major economic losses due to the occurrence of rejects, it must follow a strict production process, from obtaining raw materials to consumer

The world and in our country every year shows an increasing trend in meat production and consumption. In our main emphasis is put on further

obtaining pig meat and poultry because of rapid cycle of obtaining it without neglecting other farm species.

Nutritional value of meat varies depending on: species, race, age, sex, state of fattening region.

Nutritional value of meat is reflected in the content and quality protein.

Biological value of meat protein content is subject to particular amino acids in essential amino acids. Except methionine and phenylalanine, the meat covers the minimum requirement for an adult in ca. 100g meat / day.

#### **MATERIAL AND METHODS**

Achieve semiconservé of pork on the PFF parameter (protein fat free) requires use of raw materials of good quality and freshness first.

To check the quality of the physico - chemical semiconservé of pork products on the PFF parameter (protein fat free), were renewed 5 batches examined.

To this end the following indicators were determined physico - chemical quality:

- ❖ water, oven drying method and expressed as a percentage of total weight, according to STAS 9065/3/73;
- ❖ protein by Kjeldahl method and expressed percentage of the total weight, according to STAS;
- ❖ fat by Soxhlet method according to STAS 9065/3/73;
- ❖ ashes by calcination method;
- ❖ nitrites, Griss method, according to STAS 9065/3/74;
- ❖ sodium chloride by Mohr method, according to STAS 9065/4/73;
- ❖ phosphate added, according to STAS 9065/12/76;
- ❖ P.F.F. (protein fat free).

Determination of this indicator (PFF) requires application of manufacturing technology with a high degree of accuracy, and secondly a high quality raw materials.

To calculate the PFF parameter is necessary to determine the fat content. Protein in fat-free substance is calculated from equation:

$$P.F.F. = \frac{P}{100 - G} \times 100$$

Where:

P - total protein content determined;

G - fat content determined.

To determine the level of protein is to regulate the percentage of injection so that the amount of brine that is injected will be adjusted according to protein concentration and be approved by Health Inspection - Veterinary.

## RESULTS AND DISCUSSION

Physico-chemical examination of the 5 samples examined is presented in table number 1

*Table 1*

The result of physico-chemical examination

Features	Conditions of eligibility	Number of samples examined					
		$\bar{x}$	1	2	3	4	5
Water%	-	74,48	75,99	73,82	75,05	73,01	74,52
Protein%	-	19,60	19,80	19,59	18,02	20,95	19,64
Fat%	-	2,68	2,17	2,80	3,28	2,73	2,45
Ash%	-	3,33	2,24	3,89	3,91	3,24	3,36
Nitrites p.p.m.	-	7,49	9,75	4,31	7,73	7,82	7,84
Sodium chloride	min. 2,8; max. 3,8	2,72	2,95	2,54	2,95	2,53	2,64
Phosphate added (sodium tripolyphosphate)%	0,50	0,34	0,29	0,36	0,38	0,32	0,34
P.F.F. (protein, fat free)	min 18,5%	20,13	20,23	20,13	18,57	21,50	20,13

The proportion of value trofico-biological components of the finished product (semiconservé of pork), is significantly different from the raw material - raw pork. The changes were recorded in all groups Trofin: water, protein, fat, ash.

Average humidity of the product was 74.48% with about 29% higher than average humidity back pork. Increased humidity, technological desired richest succulence of a finished product is made on behalf of a mixture of salted water, better retained due to increased water retention capacity of salting and ripening stage of the semi.

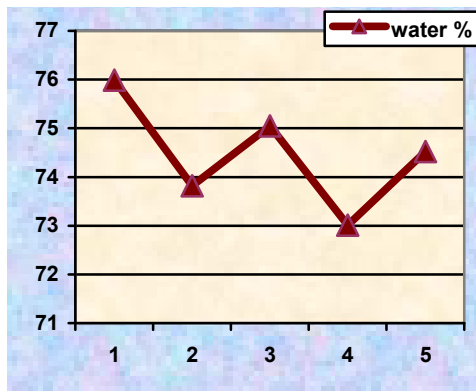


Fig. 1. Changes in water content of samples analyzed

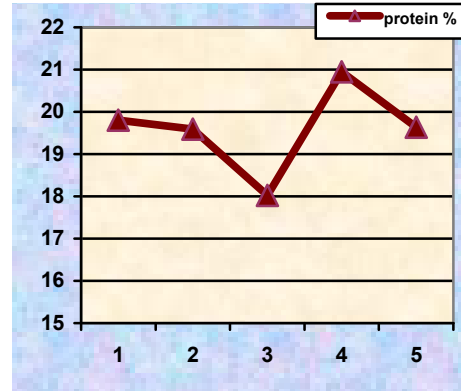


Fig. 2. Changes in protein content from the samples analyzed

The finished product, protein increased from 14% in raw meat to 18-20,95% growth recorded account of the total weight reduction by decreasing manual, the fat content.

Compared to the raw material, to which fat amounts to about 33%, the finished product was a decrease of about 12.3 times, leading to the values of 2,17-3,28%. The decrease is normal for that technology, the fat is removed since the cut.

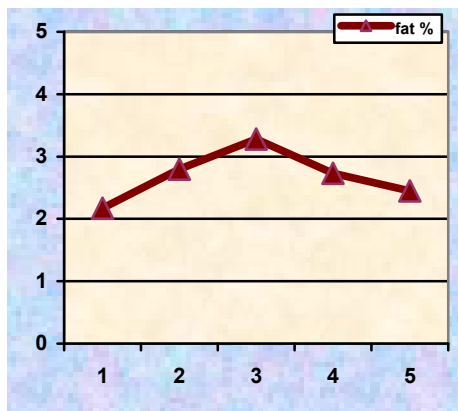


Fig 3 Changes in fat content of samples analyzed

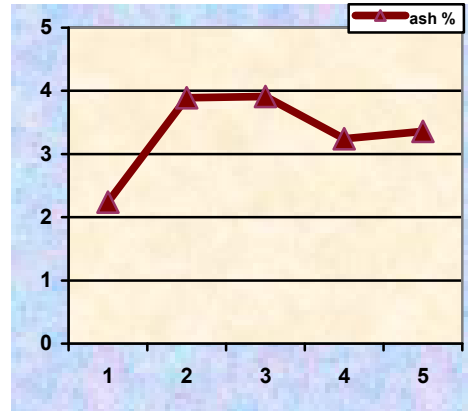


Fig. 4 Content of ash from the samples analyzed

The average ash value stood at 3.33%, to 4.16 times the shoulder material. This difference is attributed to the mineral components of the mixture of salting ( $\text{NaCl} \cong 2.5\%$   $\text{NO}_2 \cong 2.5\%$ , erisorbat)

Average content of nitrate was 74.9 ppm, 7% above the legally permissible. Average sodium chloride content was 2.72%, below the

minimum limit of acceptability (of 2.80). Phosphate was added at an average of 0.34%, 32% less than the maximum allowed as 0.50%.

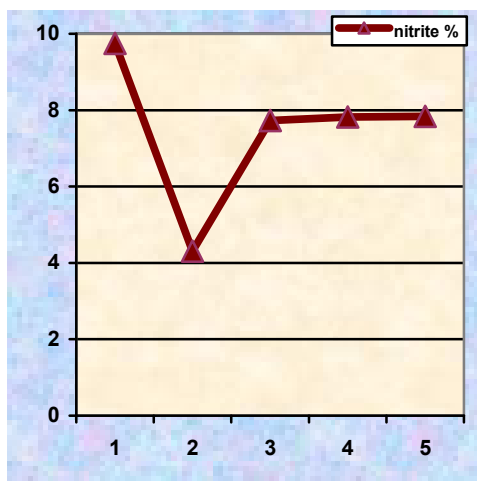


Fig. 5 Variation nitrite content of samples analyzed

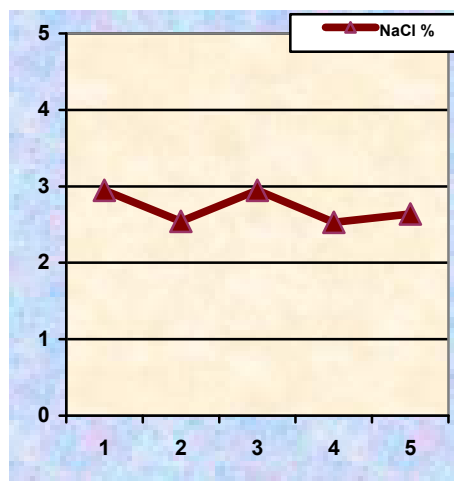


Fig. 6 Variation of NaCl content in the samples analyzed

P.F.F. (protein, fat free), the most sensitive indicator of protein quality of this type of product was at levels between 18.57% and 21.50%.

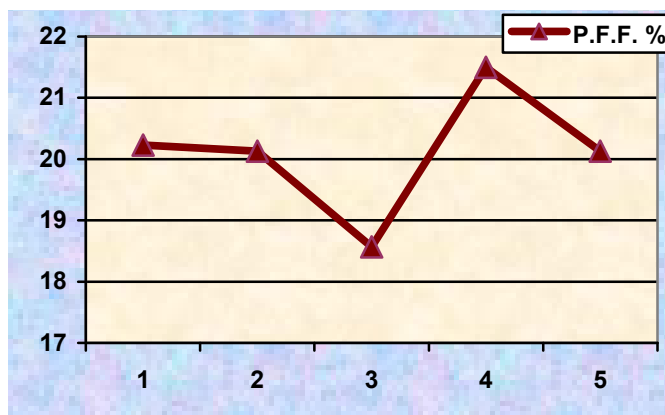


Fig. 7 Changes in content P.F.F. of samples analyzed

Inclusion of these values in acceptable limits (minimum 18.5%), take not only the technology of meat processing and cutting and elected), and especially the degree of fattening the animal's meat supplier and the race of their own. Are preferred for this purpose the state average of fattening pigs in meat breeds.

## CONCLUSIONS

Chemical composition, distribution of morpho-structure of production technology that makes the food processing occupy a place in the hierarchy of products with high value nourished but without being able to talk about food a complete or perfect in terms of composition. Animal products occupy important places in the human diet because of their rich protein content.

From studies and laboratory examination data the following conclusions:

- pigmeat semipreserved free of fat is higher than that of protein substances from the raw material contains 14% as raw material to contain 18-20,95% as analyzed samples. This increase is due to lower total weight of the raw material by decreasing manual meat;
- nutritional value expressed primarily by the content of protein substances, one can say that semipreserved have a high nutritional value once the high content of protein substances;
- semipreserved of pork fat free does not contain high amount of fat compared with other meat products which is an advantage in view of a healthy diet;
- also laboratory results obtained for the other parameters analyzed - (water, salt, ash, nitrogen) are variable but within the parameters of physico-chemical quality PFF (protein fat free) for this product.

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