

## ORGANOLEPTIC ANALYSIS OF RABBIT MEAT PASTE INTENDED FOR CHILDREN OF A YOUNG AGE

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**Abstract.** *The present work includes the results of the study of replacing rabbit meat with vegetables, in order to obtain canned meat for children of a young age (7 months). Organoleptic analysis are determined by the method of description and the method of scoring the experimental samples. It has been found that the replacement of meat with vegetable components – vegetables enrich the finished product. Organoleptic indices improve by giving rabbit meat paste a pleasant taste and smell. The Commission appreciating the experimental sample – rabbit meat paste with the addition of pumpkin at the highest level.*

**Keywords:** *canned food, meat products, vegetables, carrot, pumpkin.*

### Introduction

The quality of food products is conferred by the set of physical, chemical, organoleptic, technological and own (intrinsic) properties of the products and/or acquired through the processing processes. The main properties of food products are: organoleptic (psychosensory), physical, chemical, technological, biological, aesthetic [6].

Psychosensory properties are very important for food products, having the role of influencing the decision to accept (buy) the product and trigger the appetite. The consumer accepts or rejects a food product depending on its sensory characteristics: appearance, smell, taste, consistency, color, appreciated through the sense organs, which transmit information to the central nervous system, determining the decision [6].

Meat products intended for children of a young age may contain meat, by-products: blanched hearts, blanched pork tongues or fresh low-fat cheese, etc. [3].

For the manufacture of canned meat for children of a young age (7 months), rabbit meat is recommended. Compared to other types of meat that are frequently used in human nutrition, it is healthier, rich in protein and low in fat. Rabbit meat does not have a very strong flavor, being comparable but not identical to poultry meat [7].

Canned meat for feeding young children contains, in addition to the raw material of animal origin, vegetable products. As vegetable products are used [4]:

- vegetable oil: linseed oil, olive oil, corn oil, sunflower oil or soybean oil;
- raw materials of animal origin rich in protein: chicken eggs, skimmed milk powder, whole milk, cottage cheese and caseinate;
- vegetable component: vegetables, fruits or forest fruits;
- flavor additives: parsley extract, dill extract and celery extract;
- groats: semolina, rice, buckwheat, millet or oatmeal.

Vegetable products contain a number of useful substances that are practically absent in products of animal origin: dietary fiber, essential oils, tannins and aromatics, organic acids, phytoncides, vitamins C, B-carotene, calciferol. The organic acids contained in vegetables facilitate the assimilation of poorly soluble compounds of calcium, phosphorus and iron, contribute to the

creation of a certain composition of the microflora and inhibit the alteration processes in the gastrointestinal tract [5].

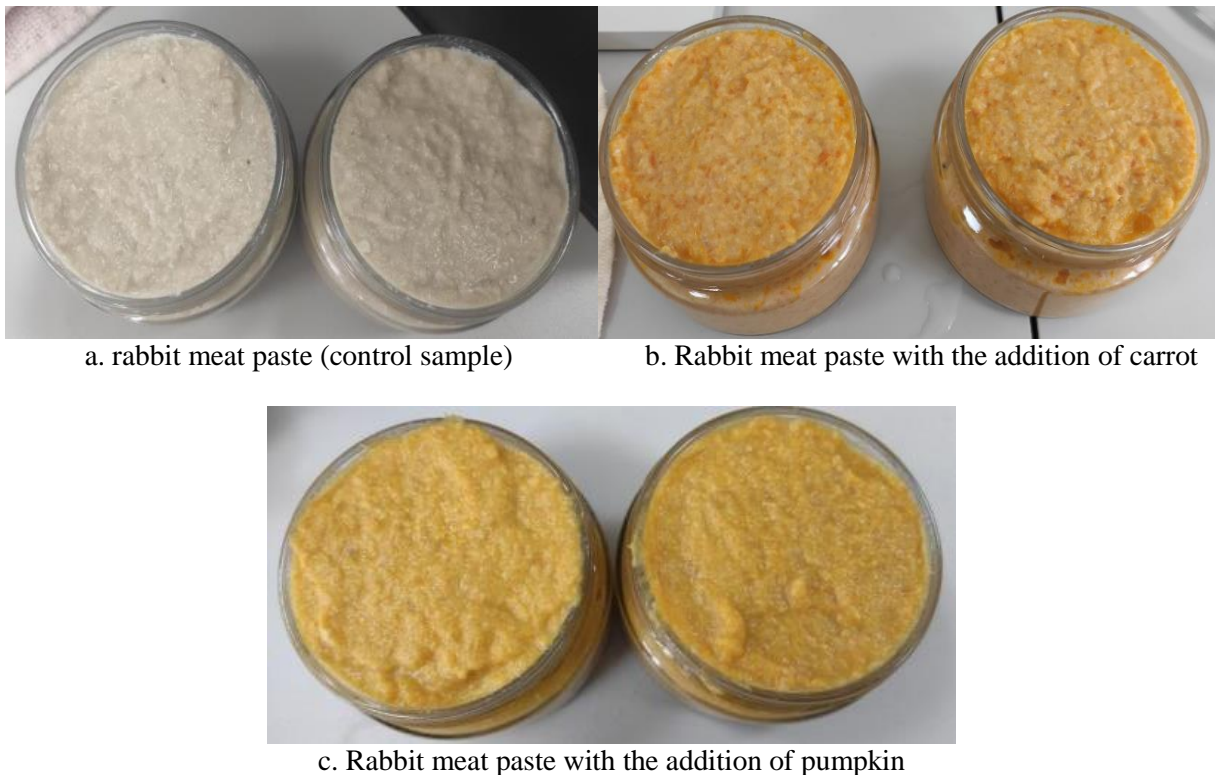
The aim of the paper is to analyze the finished meat product from an organoleptic point of view intended for children of a young age.

### Materials and methods of analysis

The raw materials and auxiliary materials, including the packaging, used for the preparation of cans intended for small children, must correspond to the standards in force or the technological norms.

In the research, the samples are elaborated and analyzed:

- rabbit meat paste (control sample) (Fig. 1.a)
- rabbit meat paste with the addition of carrot (Fig. 1.b)
- rabbit meat paste with the addition of pumpkin (Fig. 1.c).



a. rabbit meat paste (control sample)

b. Rabbit meat paste with the addition of carrot

c. Rabbit meat paste with the addition of pumpkin

**Figure 1. The experimental samples**

Based on the purpose of the paper, research methods are analyzed and applied in order to establish the organoleptic indices of rabbit meat products intended for young children.

The organoleptic analysis of the rabbit meat pasta with added vegetables is determined by the quality description method, by the scoring method, with the application of the 5-point scale.

The organoleptic indices through the scoring method is based on the principle of the scoring scale, which aims to evaluate each organoleptic characteristic by comparing it with scoring scales from 0 to 5 points and obtaining the average score of the group of tasters (Eq. (1)) [1, 2].

Scoring is determined according to the formula:

$$P_{mn} = P_{mnp} * f_p, \quad (1)$$

where:  $P_{mnp}$  – unweighted average score (arithmetic average of the results);

$f_p$  – the weighting factor (which indicates how much each sensory characteristic participates in the overall quality of the product).

## Results and discussion

Meat products have diversified intensively from year to year, as a result of the development of new manufacturing recipes and the application of new technologies appropriate to consumer requirements.

The methodology for developing the compositions for the rabbit meat paste with the addition of vegetables, such as carrot and pumpkin, is based on the analysis of the bibliographic study.

The development of these products is based on various criteria, namely: the nature of the applied technological process; the retention period; form of presentation; the nature of the raw material used.

An elaboration of a composition that includes all these criteria cannot be achieved, some products being similar to each other according to other criteria, because each product is elaborated according to specific properties, in order to reduce the numerous recipes that can be made, a scheme of production of meat products, in which the product developed according to the following criteria was taken into account: the nature of the raw material used and the way of presentation. Thus, elaborated compositions (Fig. 2): rabbit meat paste (control sample), rabbit meat paste with carrot and rabbit meat paste with pumpkin.



Figure 2. Finished product - the experimental samples

The realization of the sensory analysis of the pasta samples with the addition of vegetables: carrot and pumpkin, followed after heat treatment and cooling, including thermostating. Then the samples were subjected to organoleptic evaluation.

The sensory analysis of the experimental samples is assessed by the quality description method (Tab. 1), by the scoring method, with the application of the 5-point scale represented in the form of a profilogram (Fig. 3, 4 and 5).

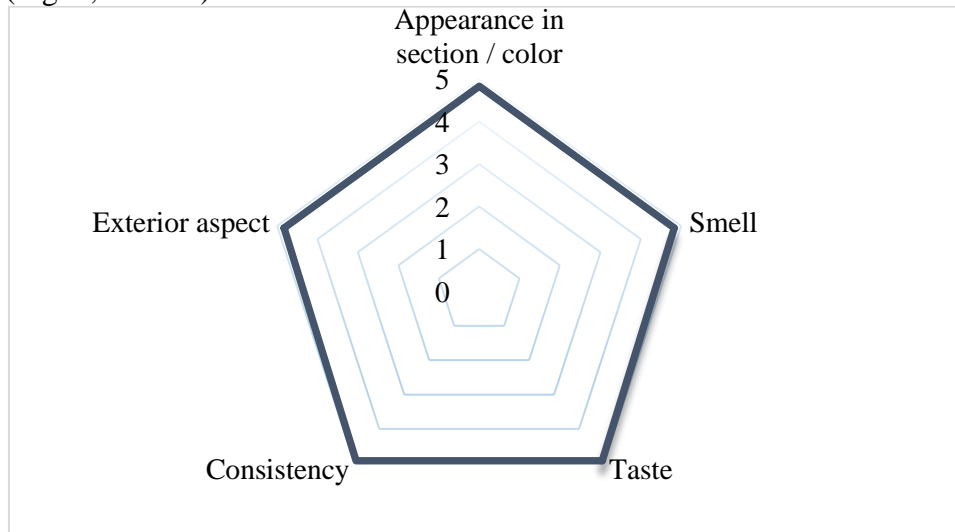
The sensory analysis of the experimental samples was determined by the scoring method, applying a scale of 5. The results are presented in Table 1.

Table 1

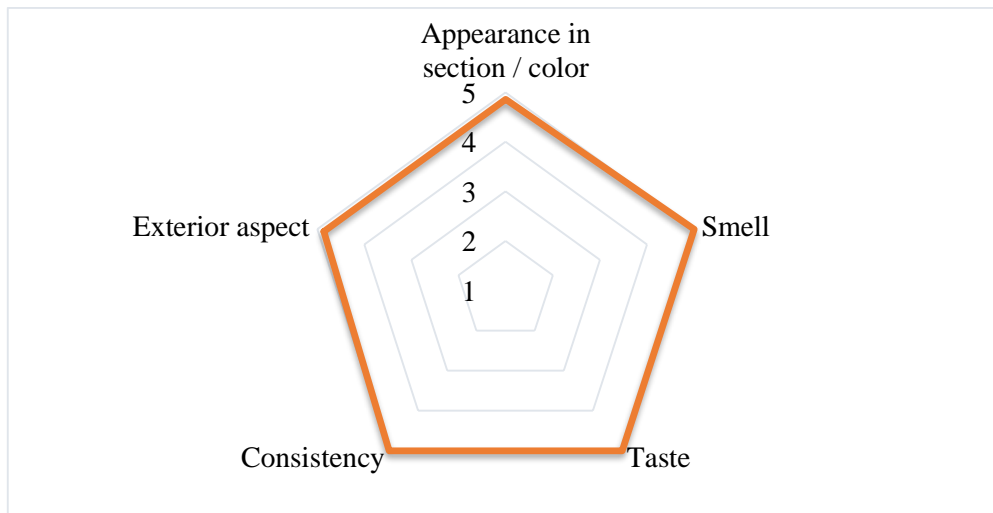
Sensory indicators of experimental samples

Sensory indicators	Characteristic. The experimental sample		
	Rabbit meat paste (control sample)	Rabbit meat paste with the addition of carrot	Rabbit meat paste with the addition of pumpkin
The exterior appearance	Homogeneous mass, finely ground, pasty, ointment, without granularity, with an insignificant amount of melted fat in the volume of the package. With added vegetables and grains with unique connective tissue inclusions. The presence of separate broth is allowed.		
Aspect in section / Color	Color - gray, yellow or brown in various shades. The presence of inclusions from dark red to dark brown and a slight darkening of the top layer of the contents of the boxes is allowed.		
Smell and taste	Pleasant, characteristic of this type of product, no foreign smell.		
	with a pleasant aroma specific to rabbit meat	with a specific pleasant smell/taste of carrot	with a specific pleasant smell/taste of pumpkin
Consistency	Soft, tender. The presence of individual particles of compacted consistency is allowed.		

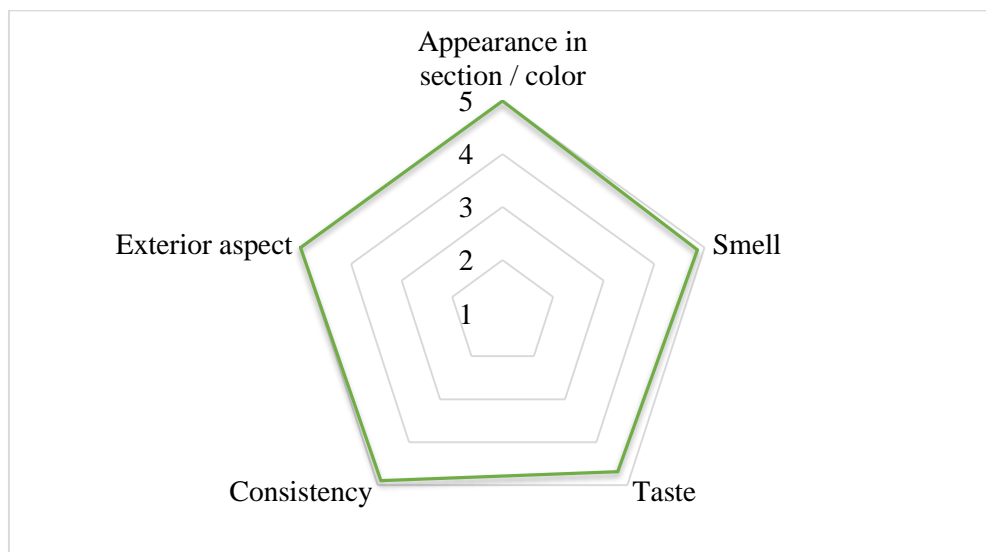
The organoleptic analysis of the experimental samples - rabbit meat pasta with vegetables assessed by the scoring method with the application of the 5-point scale is presented in the form of a profilogram (Fig. 3, 4 and 5).



**Figure 3. The profile of the rabbit meat paste**



**Figure 4. The profile of the rabbit meat paste with the addition of carrot**



**Figure 5. Profile of rabbit meat pasta with the addition of pumpkin**

As a result of the sensory evaluation of the experimental samples (Tab. 1), it can be concluded that the samples with the addition of vegetables differ from the control sample. Samples with added vegetables have a specific, pleasant taste and smell.

The sensory evaluation by the scoring method (Fig. 3, 4 and 5) proves that the addition of vegetables gives the finished product special taste properties. The use of natural vegetable components: carrot and pumpkin does not negatively influence the quality of the product, but on the contrary, it gives the rabbit meat pasta a special taste appreciated by the panel of tasters.

The sensory assessment carried out by 2 methods of analysis found that the samples with the addition of vegetables: carrot and pumpkin have better external appearance, taste, smell and consistency than the control sample. Following the organoleptic evaluation, the experimental samples with the addition of pumpkin obtained the best results.

### **Conclusions**

Ensuring the quality of the products and through sensory analysis, in the end the products were appreciated by the tasting committee and recommended for consumption in children's food.

The results of the organoleptic evaluation show the prospect of replacing rabbit meat with vegetables in the production of canned food for children.

Vegetables: carrot and pumpkin used as additives that increase viscosity and plasticity, but also improve the consistency and color of the finished product.

Organoleptic evaluation of meat paste intended for young children develops new concepts of rabbit meat products highlighting important attributes to consider in the development of new meat and vegetable products for children.

### **Referințe**

1. ISO 13299:2016. Sensory analysis — Methodology — General guidance for establishing a sensory profile. Publication date: 2016-03. Chisinau: SIM, 2016. 41 p.
2. SM EN ISO 8586:2014. Sensory analysis - General guidelines for the selection, training and monitoring of selected assessors and expert sensory assessors (ISO 8586:2012). Publication date: 2014-06-26. Chisinau: SIM, 2014. 42 p.
3. CRETOV, M.A., LEADOV, A.V. *Композиция на мясной основе для производства продуктов питания для детей раннего возраста* [Meat-based composition for the production of food products for young children]. Patent no. RU 2 275 130 C1. Publ.: 2006-04-27.
4. ТИМОШЕНКО, Н.В., УСТИНОВА, А.В., МАСЛОБОЕВ, О.А., ДЕРЕВИЦКАЯ, О.К. *Мясорастительные консервы для детского питания* [Canned meat and vegetables for baby food]. Patent no. RU 2 142 242 C1. Publ.: 1999-12-10.
5. CRETOV, M.A., LEADOV, A.V., GUȘIN, V.V., STEFANOVA, I.L., DOROFEEV, V. M. *Мясорастительные консервы для детского питания* [Canned meat and vegetables for baby food]. Patent no. RU 2 312 524 C2. Publ.: 2007-12-20.
6. POP, C., POP, M. *Merceologia produselor alimentare* [Merceology of food products]. Publishing house: EDICT PRODUCTION, 2006. 380 p. ISBN: 973-7699-15-7
7. POPA, N., GRUMEZA-CLEFOS, I. Diversificarea sortimentului de produse din carne cu utilizarea cărnii de iepure [Diversification of the assortment of meat products with the use of rabbit meat]. In: *Conferința Tehnico-Științifică a Studenților, Masteranzilor și Doctoranzilor = Technical Scientific Conference of Undergraduate, Master and PhD Students, Chisinau, 29-31 March 2022*. 2022, Vol. 1, p. 502-506. ISBN 978-9975-45-828-3, ISBN 978-9975-45-829-0 (PDF).