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## ANALYSIS OF QUALITY OF TURKEY PÂTÉ: ORGANOLEPTIC, PHYSICO-CHEMICAL AND MICROBIOLOGICAL EVALUATION

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### Abstract

High-quality poultry meat products, characterized by freshness, flavor, and safety, are essential for consumer satisfaction and loyalty in the food industry. This paper aims to assess and verify the quality of turkey liver pate cans obtained within a poultry meat processing unit in the Moldova region, through organoleptic, physico-chemical, and microbiological analyses. The analysis of the chemical composition showed a content of 1.35% NaCl, protein content with an average value of 8.76%, and fat content with an average value of 24.6%. Also, microbiological analysis of the cans demonstrated the absence of pathogenic bacteria from the genera *Salmonella* and *Escherichia coli*. In conclusion, quality assurance of canned meat is achieved through the implementation of total supervision through the correct and impartial evaluation of all risk factors for the health of the final consumer. Hygiene must be ensured in all stages of production, starting from hygiene on the technological flow of canning, the hygiene of the storage space and the sale of preparations.

### Introduction

Turkey pâté stands as a delicacy revered for its rich flavor, texture, and culinary versatility. However, ensuring its quality demands a multidimensional evaluation encompassing organoleptic, physicochemical, and microbiological assessments. This comprehensive analysis serves as a crucial endeavor, offering insights into the intricate interplay of sensory attributes, chemical composition, and microbial presence within this esteemed gastronomic delight [1-3].

Within the realm of organoleptic evaluation, the sensory experience unfolds as a narrative of taste, aroma, texture, and visual appeal. Delving into these perceptual dimensions unveils the nuances that distinguish exceptional pâté from its counterparts. Furthermore, understanding the physico-chemical composition provides a scientific lens, examining parameters such as moisture content, pH levels, lipid oxidation, and protein denaturation. These metrics not only elucidate the product's stability and authenticity but also contribute to its nutritional profile and shelf-life estimation [1,3-6].

### Material and method

The study material for this research paper consists of turkey pâté obtained through the processing of turkey meat, raw material, in a processing unit located in the Moldova region. To assess the quality of the samples, a series of sensory, physico-chemical, and microbiological analyses were conducted.

The turkey liver pâté under analysis is commercialized packaged in metal cans, with a net weight of 120 grams. The results obtained from the laboratory analyses were statistically interpreted using calculation parameters from the Microsoft Excel program (XLSTAT).

### Results and discussions

By calculating and interpreting the data regarding the sensory analysis of the product, we have reached the final conclusion that, according to the specialized literature, it receives a rating of "good". In Figure 1, the results regarding the NaCl content obtained from the titrimetric analysis for the "turkey liver pâté" product are expressed. The difference between the reference value, which is 1.5% NaCl, and the average value of 1.35% NaCl is only 0.15 percentage points [13]. Regarding the water content of the "Turkey Liver Pâté" product, the range of values falls within the interval of 63.82 to 70.04, with an average of 65.32. The standard deviation has a value of 1.82, while the standard error of the mean reaches a value of 0.58, with a coefficient of variation of 2.79. Figure 2 illustrates a comparison between the obtained average value and the value predicted by the standard [13]. In Figure 3, the results obtained regarding the protein content of the "turkey liver pâté" product are presented. The protein content for turkey liver pâté cans has an average value of 8.76%, a value close to the reference value of 9% [13]. The range of values ranges from a minimum value of 8.44 to a maximum value of 9.04%. For the fat content in the samples of turkey liver pâté, a range of values was obtained from 24.12 to 25.12%, with an average of 24.66%. The coefficient of variation has a value of 1.36. From the graph, we observe that the obtained average value (24.66) closely approximates the value specified in the specialized standard (25.37), with a difference of only 0.71 [13] (figure 4).

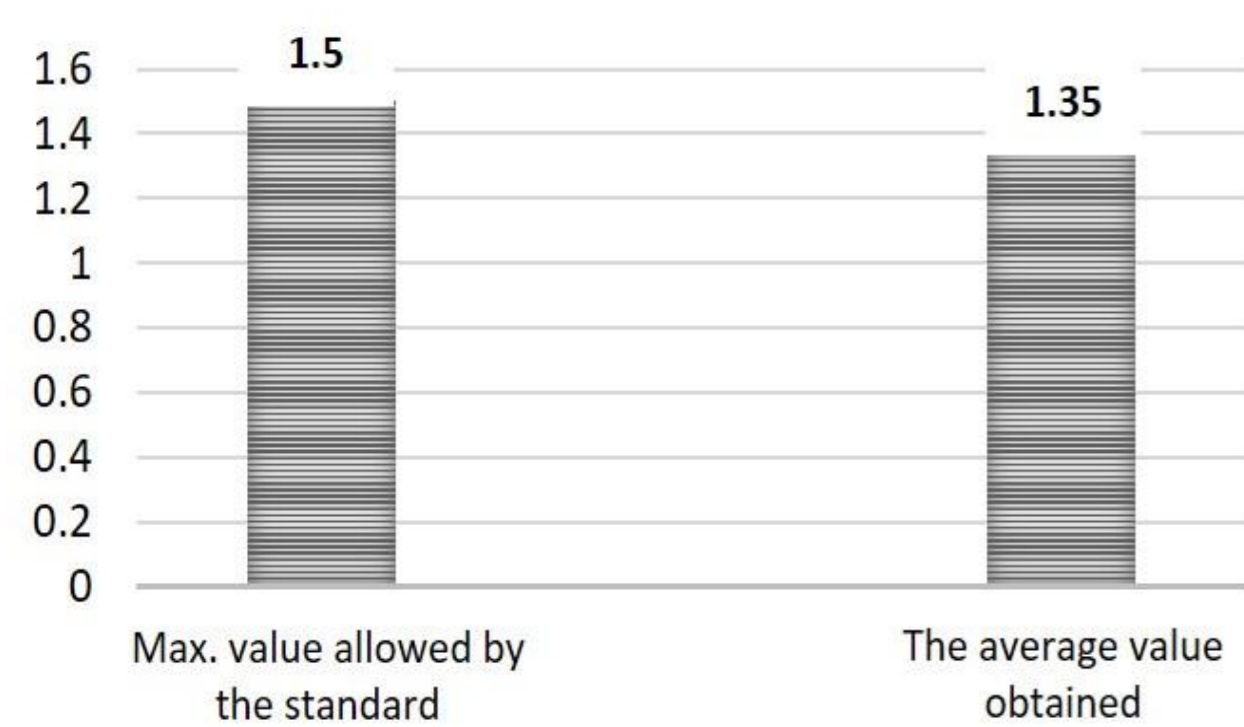


Figure 1. Comparison between the mean value and the standard value of the NaCl content(/)

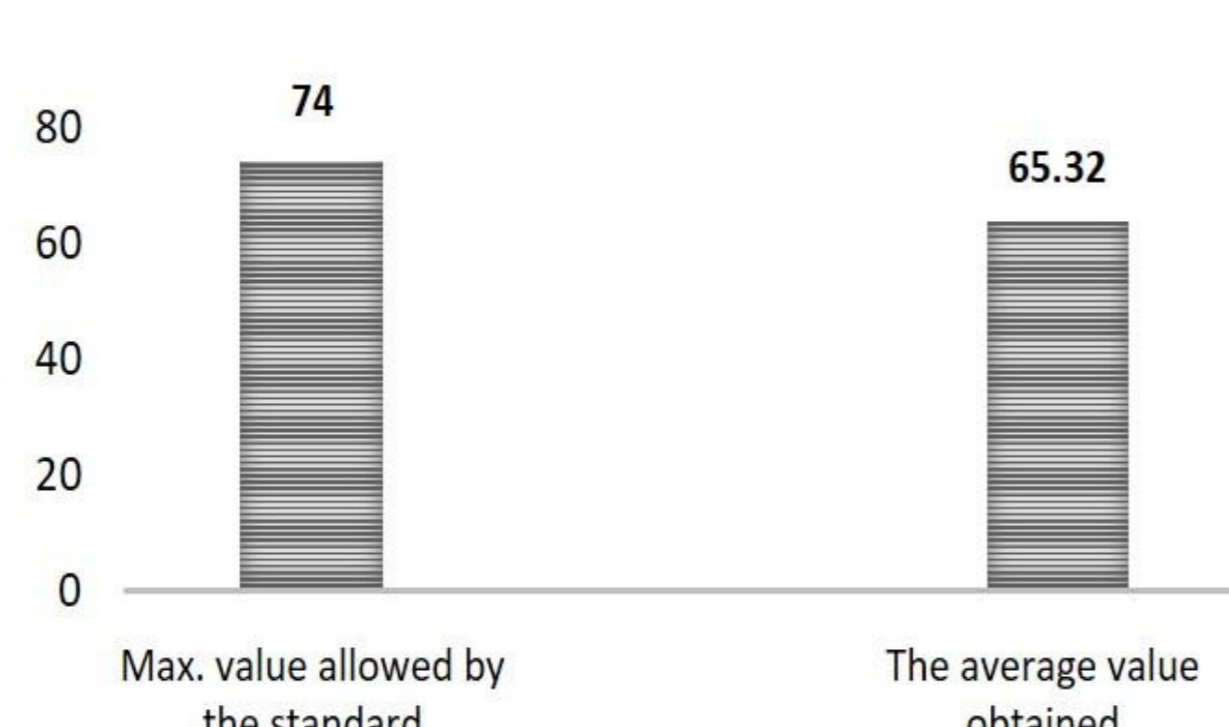


Figure 2. Comparison between the average value and the standard value of the water content

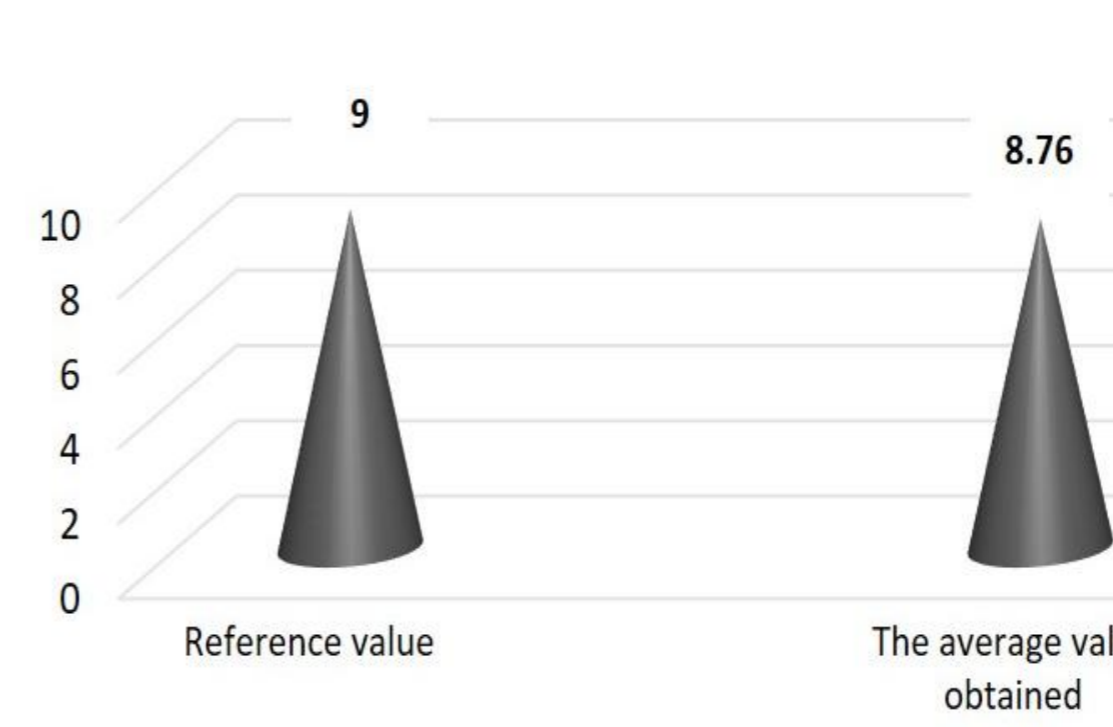


Figure 3. Comparison between the average value and the standard value of the protein content

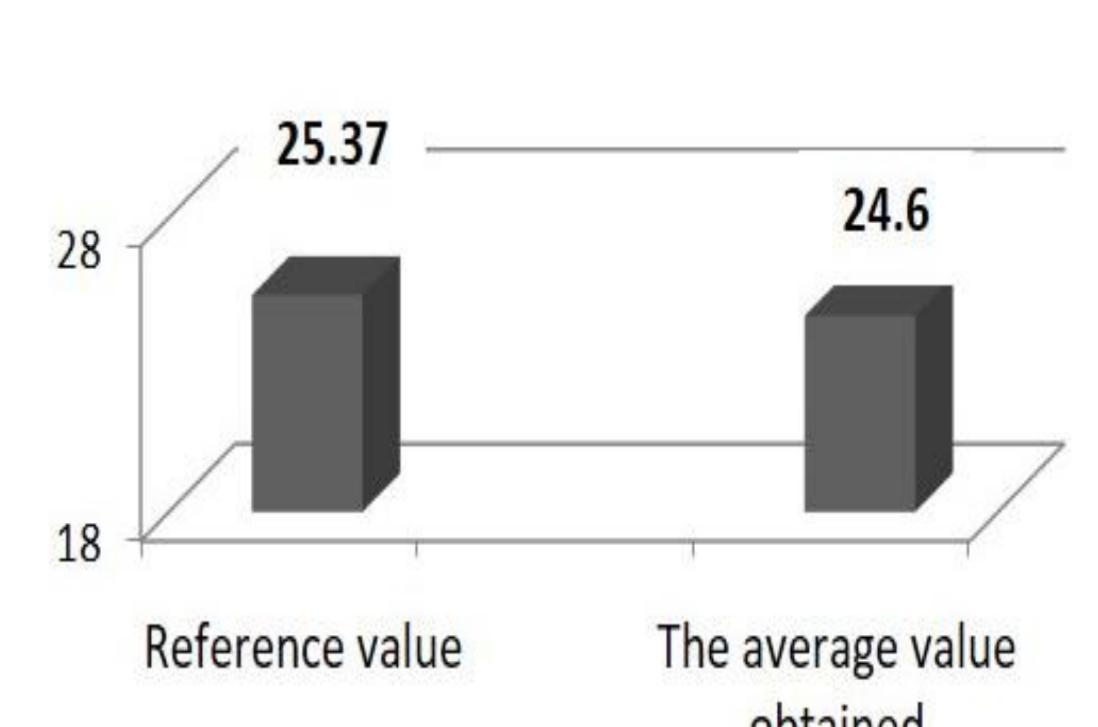


Figure 4. Comparison between the average value and the standard value of the fat content

the studied product is not contaminated with pathogenic bacteria, *Salmonella* and *E. coli*, as the results for each of the 5 determinations are negative. Therefore, the cans have been properly sterilized, stored, and delivered under safe conditions, making them safe for human consumption (Table 1).

Table 1. The results of the microbiological analysis for *Salmonella* and *E. coli* bacteria

Microbial agent	Leak	<i>Salmonella</i> / 25 g sample	<i>E.coli</i> / g sample
STAS Reference	-	SR EN ISO 6579-1:2017	SR EN ISO 16649-2:2001
Sample no.			
1	Suitable	absent	absent
2	Suitable	absent	absent
3	Suitable	absent	absent
4	Suitable	absent	absent
5	Suitable	absent	absent

### Conclusions

In conclusion, the turkey liver pâté cans exhibit a high amount of fat, thus providing a significantly higher energy content. Additionally, the protein content is relatively high, accompanied by a high digestibility coefficient.

From a microbiological standpoint, the product is free from pathogenic bacteria: *Salmonella* and *E. coli*.

In conclusion, ensuring the quality of canned meat products is achieved through the implementation of total surveillance, known as "from farm to table," by correctly and impartially assessing all risk factors for the health of the final consumer.