

Research on the main sensory and physicochemical characteristics of chicken pastrami

Ileana Cocan*, Ariana Velciov, Daniela Stoin, Monica Negrea

Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara,
Faculty of Food Processing Technologies, 119, Calea Aradului, 300645, Timisoara, Romania

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Abstract

The main objective of this paper is the study of sensory and physicochemical characteristics of chicken pastrami, made by producers from the west side of Romania.

Sensory examination was performed by analyzing the appearance, texture and taste. The main physical-chemical parameters measured of processed samples were: water content, dry matter, ash, nitrites, fat content, NaCl and animal fat oxidation determination.

Keywords: Chicken pastrami, physical-chemical characteristics, sensory characteristics

1. Introduction

The nutritional value of meat is high due to the high level of protein, vitamins, and minerals. Proteins are basic components of food that provide nutritional value. So it will be appreciated the quality of products according to their protein content [2].

Chicken pastrami is usually made from the chicken breast, and the process of making can take anywhere from six weeks to three months, depending on the size of the breast. Today, the breast is first cleaned, salted and left for about six weeks. Next, it is washed several times to remove the salt, and is hung in a dark, well ventilated environment for a few days. The surrounding air is important to the final quality of the pastrami chicken; the best results are obtained in a cold climate. The pastrami chicken is then smoked by placing it in a smokehouse to be cured by the action of smoke. The amount of time this takes varies, depending on the size of the breast (about 4-5 days).

When the breast is smoked, it is hung to air, either at room temperature or in a controlled environment, for drying [3].

Sensory characteristics of meat have special importance in determining the quality of meat, along with nutritional factors, technological and hygiene. The main meat sensory characteristics are: color, taste, smell (aroma). For meat can be determined the degree of freshness: through sensory, physical (mechanical), chemical (hydroxyproline determination), and histological methods [5].

Knowledge of physicochemical and sensory characteristics of meat is necessary in solving the problems of storage, in determination of equipment capacity, in processing through cold and heat and in appreciation of sanitation.

The physical characteristics of meat and meat products are important in determining both storage space and determining the energy needed for processing in different phases [6].

2. Materials and method

Materials: Have been analysed 4 samples of chicken pastrami from different producers from the western part of Romania.

Samples were analyzed by assessing sensory appearance, texture and taste and physical - chemically by determining water content, dry matter, ash, fat, nitrites, NaCl and animal fat oxidation determination.

Determinations have been achieved according to following standard:

- Moisture content SR ISO 1442:2010 [7]
- Ash content SR ISO 936:2009 [8]
- Fat content SR ISO 1443:2008 [9]
- Sodium chloride SR ISO 1841:2000 [10]
- Nitrites SR EN 12014-3:2005 [11]

3. Results and Discussions

In terms of sensory determination, all samples were analyzed in accordance with accepted legal norms:

- Shape – irregular pieces about 4 cm thick.
- Appearance - uneven from golden yellow to reddish brown, clean surface, non-sticky, without mold or slime spots.
- Appearance per section - white fibrous mass.
- Consistency – fresh.
- Taste and smell - pleasant, characteristic to spices used. Without foreign smell and taste (sour, mold, rancid).

In the physical-chemical analysis of the samples were considered the following conditions of admissibility for physical-chemical properties: Water - maximum 67%; Fat - maximum 30%; NaCl - maximum 2.8%, nitrites – 7 mg/100 g products [1-4].

The results of physical - chemical properties of the samples tested are shown in the following figures and tables.

The moisture content in analysed samples ranged between 66.41% for sample 4 and 70.38% for

sample 2, framing in the maximum admitted limit for this parameter (75%).

The dry matter content was between 26.62% and 33.59%, the minimum admitted level established by current legislation being 25%. Figure 1 and 2 shows a graphic representation that represents in a suggestive way the results of the experimental research.

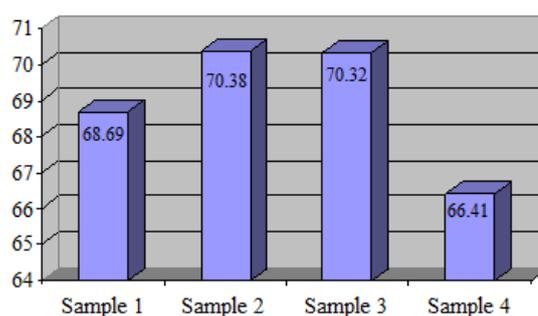


Figure 1. Moisture content of chicken pastrami samples

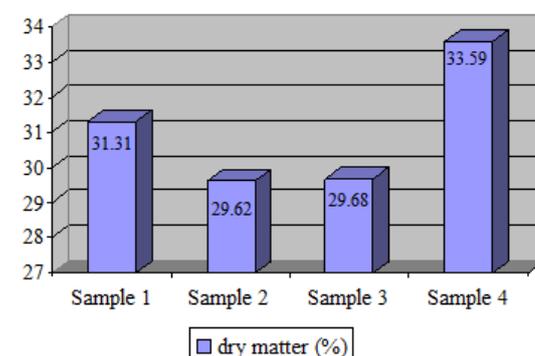


Figure 2. Dry matter content of chicken pastrami samples

Ash content of pastrami chicken samples ranged between 3.08% – 4.81 %, as can be seen in figure.

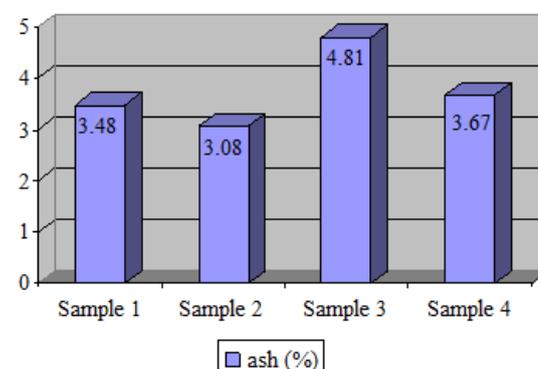


Figure 3. Ash content in chicken pastrami samples

Values of nitrites from the analyzed chicken pastrami samples ranged between 0.2 ppm and 6.5 ppm. The maximum value admitted for this parameter is 7 ppm, all determined values being below the maximum admitted limit set by current legislation (figure 4).

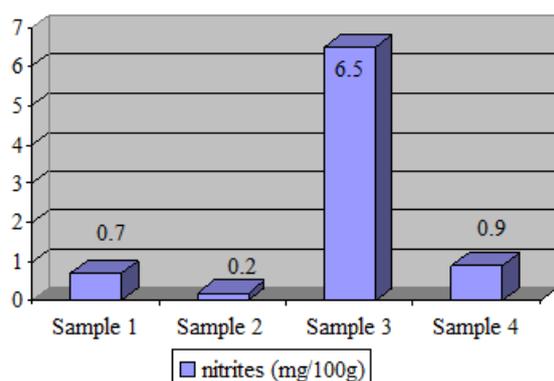


Figure 4. Nitrites content in chicken pastrami samples

Salt content of the analyzed chicken pastrami samples ranged below the maximum limit of 3% for this parameter. The percentage of salt in the analyzed samples showed values between 1.91% and 2.75%. Graphical representation plays suggestive experimental research results (figure 5).

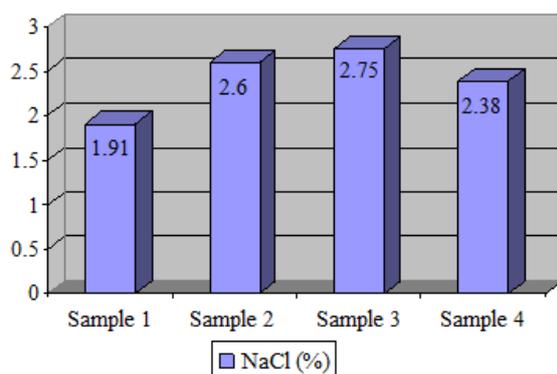


Figure 5. Sodium chloride content in chicken pastrami content

The fat content of the analyzed samples ranged between 17.08 and 25.67 %, the maximum permissible value for this parameter is 30%. All samples analyzed were within admissibility limit (figure 6).

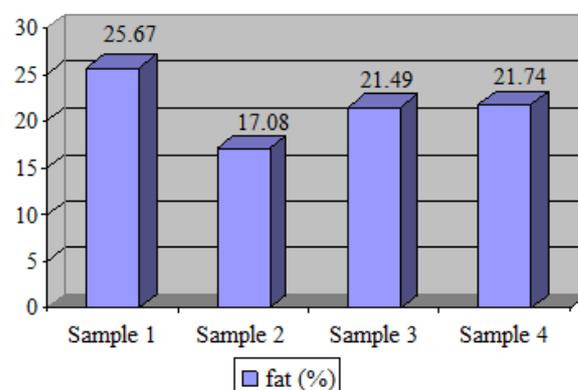


Figure 6. Fat content in chicken pastrami samples

The degree of freshness of chicken pastrami samples was determined using Kreiss reaction.

Table 1. Kreiss reaction in pastrami chicken samples

Sample	Kreiss reaction
A	negative
B	negative
C	negative
D	negative

From the data analyzed by Kreiss reaction, show that all three chicken pastrami samples were fresh, with no signs of spoilage.

4. Conclusion

The sensory and physicochemical analysis results for chicken pastrami samples were within the allowed legal requirements.

After the experimental results analysed can be formulate the following conclusions:

- Moisture content obtained was below the maximum allowed limit for this parameter, ie 75%;
- Ash content ranged within 3.08 - 4.81%;
- The nitrate content in the analyzed samples obtained ranged below the maximum allowed limit of 7 ppm;
- Sodium chloride content in the analyzed samples was within the limit of admissibility of 3%;

- The fat content obtained for all samples ranged below the maximum admitted limit of 30%.
- Kreiss reaction shows that the four chicken pastrami samples analyzed were fresh with no signs of alteration.

In conclusion all four samples of chicken pastrami have excellent sensory and physicochemical qualities within limits set by legislation, being suitable for consumption.

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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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