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Some quality parameters of dry fermented sausages (*Čajna kobasica*)

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Abstract

The aim of this study was to evaluate some quality parameters of dry fermented sausage (*Čajna kobasica*) from different producers from the market in Vojvodina. The investigated parameters were chemical composition and sensory properties of external appearance and/or condition of the packaging, appearance and composition of cut surface, color and stability of color, odour and taste and texture and/ or juiciness. The results showed that the chemical parameters were very variable but in an agreement with Serbian legislation. Sensory scores were different among different producers. Overall sensory quality of tested samples ranged from 3.37 to 4.34.

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1. Introduction

Fermented meat products are produced and consumed in all parts of the world and are one of the most important

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foods in the human diet. Production of dry fermented sausages is mostly based on local customs and traditional methods of production that are transmitted from generation to generation. In recent decades, these sausages are increasingly produced in industrial conditions, and because of that, there is a need to define methods of production that can ensure uniform quality of the product and its safety. One of the most popular dry fermented sausage in the Serbian market is *Čajna kobasica*. *Čajna kobasica* is made from minced pork and beef meat, hard fat tissue and additives. Additives which are used in the production of *Čajna kobasica* are curing salts, sugars, spices, and starter cultures.

2. Materials and methods

Sausages examined in this work were selected randomly from six different producers from the market. Sausages were numbered from 1 to 6. From each producer, five dry fermented sausages were tested.

Moisture, total protein, RCCTP, free fat, ash, NaCl and nitrite content were determined according to ISO recommended standards^{1,2,3,4,5,6,7}.

A panel consisting of seven trained members of different ages performed sensory evaluation. Evaluations were performed according to a 5-point scale descriptive system, from 0 to 5, with sensitivity threshold of 0.25 points. Each mark was ascribed a distinctive quality level, as follows: 5–extraordinary, typical, optimal quality level; 4–observable deviations or insignificant quality defects; 3–drawbacks and defects of quality; 2–distinct to very distinct drawbacks and defects of quality; 1–fully changed, nontypical properties, product unacceptable; 0–visible mechanical or microbiological contamination, atypical product and similar. The overall sensory quality of sausages was evaluated according to the following expression: Overall sensory quality = (external appearance of sausage x2 + appearance and composition of cut surface x5 + colour and colour maintenance on the cutting x3 + odor and taste x7 + texture and juiciness x3) / 20.

3. Results and discussion

The mean values of the chemical components of the sausages are presented in Table 1. According to Serbian Regulations, moisture content in dry fermented sausages must be lower than 35%⁸. The average moisture content in samples of dry fermented sausages ranged from 10.55% (sample 1) to 34.45% (sample 6). The protein content in dry fermented sausages must be above 20%⁸. The lowest protein content was recorded in sample 6 (20.75%) and the highest in sample 4 (25.21%). Protein content in *Čajna kobasica* was similar to the registered values in earlier studies (23.77%)⁹, but lower than those found in *Petrovska klobása*¹⁰. The relative content of connective tissue proteins was the lowest in sample 2, amounting to 8.71%, and the highest in sample 6 (16.58%), and were in concordance with the Serbian Regulations (2012)⁸ for that group of products. The average free fat content in *Čajna kobasica* ranged from 36.43% (sample 4) to 59.80% (sample 1). The fat content in samples 3, 4, 5 and 6 was similar to those of *Petrovska klobása* and *Sremska kobasica*^{11,12}. The chloride content in sausages ranged from 3.18% (sample 6) to 4.34% (sample 2).

Table 1. Chemical composition of dry fermented sausages (*Čajna kobasica*).

Sample	Moisture content (%)	Protein content (%)	RCCTP (%)	Free fat content (%)	Ash content (%)	NaCl (%)	Nitrite content (mg/kg)
1	10.55±0.10*	22.28±1.58	14.00±0.02	59.80±0.09	6.14±0.01	3.88±0.01	3.00±0.01
2	15.02±0.05	24.81±0.58	8.71±0.02	52.86±0.14	6.31±0.02	4.34±0.02	4.00±0.01
3	24.73±0.48	21.54±0.09	14.48±0.03	47.84±0.08	5.60±0.02	3.56±0.03	6.00±0.01
4	33.23±0.24	25.21±0.63	14.60±0.06	36.43±0.09	5.13±0.01	3.71±0.02	5.00±0.02
5	23.20±0.09	24.72±0.13	9.71±0.05	45.73±0.11	5.68±0.04	3.45±0.03	8.00±0.01
6	34.45±1.68	20.75±2.36	16.58±0.05	38.95±0.05	4.85±0.03	3.18±0.01	3.00±0.03

*The values are presented as average values±standard deviation.

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