

STUDIES REGARDING DETERMINATION AND ESTABLISHING THE VALIDITY OF BOILED AND SMOKED MEAT PRODUCTS

Frigioiu Modoran Adela¹, D. Frigioiu Modoran¹, I. Tofan²

¹S.C.ROLLIT PRODIMPEX SRL, str. Erou Iancu Nicolae 126B Voluntari - Ilfov, România,
e-mail: adelafrigioiu@yahoo.com, ²Universitatea "Dunărea de Jos" Galați

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Abstract: Underlining the validity problem can only be welcomed, given the conditions that in nowadays there doesn't exist a recipe without preservatives, antioxidants, colorants etc.

Modern technology for meat products has a very important role in improving the quality of aliments, level of civilization and the prosperity of a country.

In order to determine the validity of food products we have chosen as an example meat product as they have an equilibrated trophic composition, a high biological value and special nutritional qualities.

Using the cold air technologies in obtaining meat products ensures, together with the food additives, keeping of quality and nutritional characteristics of the final products.

For this study we have chosen meat products from the group of boiled and smoked products: beer sausage.

In the final we have analyzed the results of the experiment from the quality, microbiological and physical-chemical point of view. The quality exam referred to appreciate the aspect, color, taste, smell, consistency etc. The physical-chemical analysis determined humidity, salt, nitrates, Kreiss reaction and mg. NH₃/100 g.

INTRODUCTION

The continuous progress of human society has lead to the development of technology in all the domains. Food products are today obtained by modern technology and the demand that increases from one day to another leads to overproduction and a large variety of products (Banu, C., 2007).

Clearly, using food additives leads to lowering the production cost and the price of the final product, to increasing the validity and to improving the product's quality.

Food additives need to be used only for benefic reasons, technologically and economically speaking. Using food additives is not justified if: the suggested doses endangers the consumer's health, determines a sensitive lowering of nutritional value of the food products or hides fabrication or manipulation deficiency or in order to misinform the consumer (Tofană Maria, 2003).

MATERIAL AND METHODS

Food products samples sensorial and laboratory analysis in order to determine and establish the validity were drawn according to pattern standard, representing 2% of the beer sausage lot.

Depositing of the products has been done in a special arrangement in which the atmospheric parameters were according to technical specification standards. The parameters

are supervised with an electronic thermo hygrograph with Lufft – OPUS IO external sensor (Banu C., 2002).

The first sensorial and laboratory analysis were made on the drawing day, and at the half of the period till the validity term given by the producer, on the expiration day. And according to the prescribed validity we have established the steps for periodic examination till the expiration day of the product.

For the validity term of 15 days given by the producer we have analyzed the beer sausages.

Beer sausages are a part of boiled and smoked products. The lot made on the 10.03.2008 was of 100 kg, from which we have drawn on the 11.03.2008 a pattern of 2 kg and analyzed it sensorial, physical-chemical and microbiological until the expiry date, meaning until the 19.04.2008, on the 25th day from the expiry date given by the producer.

The pattern samples are cylindrical pieces, with 22 mm diameter and 40 mm length, necklace form. The surface is clean, unstuck; brown-reddish colored, typically for smoked products, pleasant smell, corresponding to the ingredients that were used.

Quality exam of the samples refers to aspect, color, smell, taste, consistency, etc.

Microbiological exam refers to *Salmonella*; coli form bacteria *Escherichia coli*, staphylococcus coagulatur-positive, sulfur-reducing bacteria, *Bacillus cereus*.

Physical-chemical exam consisted in determination of humidity, salt, nitrates, Kreiss reaction and mg NH₃/100 g product.

RESULTS AND DISCUSIONS

The microbiological and physical-chemical analysis were supervised during 40 days, the results are marked in tables no 1 and 2).

Table 1. Physic-chemical characteristics of the patterns of **beer sausage**

Characteristics	Admissibility conditions acc. SF 3/2000	P1 (11.03)	P2 (17.03)	P3 (26.03)	P4 (01.04)	P5 (08.04)
Water %	max. 60	59.49	56.39	45.14	–	45.23
NaCl %	max. 3.5	2.53	2.65	2.88	–	2.88
Nitrates mg/100g product	max. 7	0.876	0.100	0.54	–	0.54
Mg NH ₃ /100g product	max. 45	15.74	–	–	20.10	–
Kreiss Reaction	negative	–	negative	negative	–	negative

Table 2. Microbiological characteristics determined according to the Health Ministry Order no.975/98 from 01.04.2008 for **beer sausage**

Microbial analysis	Admissibility conditions	Parameters obtained at sample 4
<i>Salmonella</i> /25g	Absent	absent
Coli form bacteria max./1g	10	<10
<i>Escherichia coli</i> max./1g	1	absent
<i>Staphylococcus coagulatosopozitive</i> /1g	10	<10
Sulphur reductive bacteria max./1g	10	<10
<i>Bacillus cereus</i> /1g	10	<10

Water quantity (figure no.1) has modified during the observation period, the sausage composition being in natural comestible membrane.

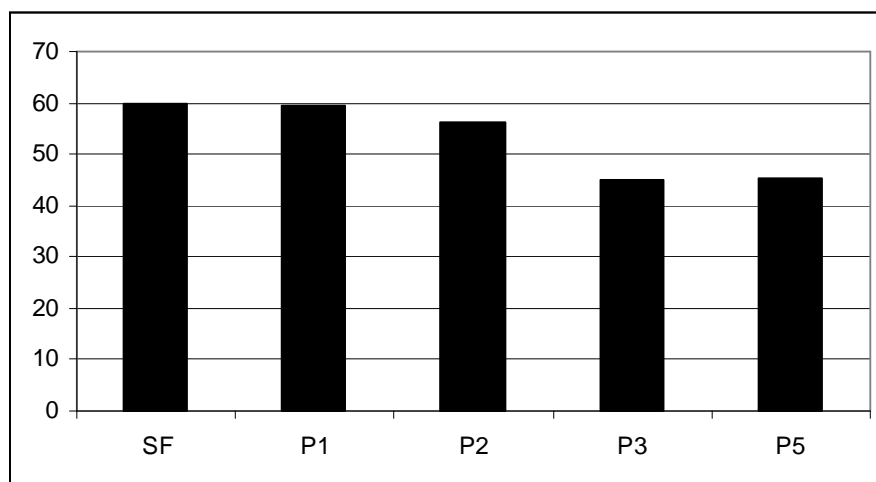


Figure 1. Water quantity variation in analyzed beer sausage during 10.03 – 19.04.2008

On the 17.04.2008 the remaining samples started to modify on the exterior (sticky surface) as well the smell and taste have modified, becoming specific to aerobic putrefaction. Since that date the samples have been considered as not being proper to consume.

CONCLUSIONS

- Establishing the relatively short validity terms by the producer in order to have success with his products on the market towards the consumer by maintaining the guaranteed quality from the moment of put on sale till the moment of consummation;
- The determination have proven a longer validity period of the beer sausage, period when the quality characteristic values are maintained;
- According to the real facts of physic-chemical, sensorial and microbiological analysis established in the laboratory, we can determine new validity values of the beer sausage;
- New period of the validity term is of 20 days as is established in the conditions of the experiment according to the company's standards, if temperature and humidity are being kept for each product during the technical-economical circuit, without interfering with the conditions in the depot, during transportation or sale.

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