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Original Article

Considerations upon Presence of Food Additives in Salami Commercialized in Romanian Supermarkets

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Abstract

There is well-known that current dietary habits favor the food industry and the loss of energy through excessive cooking and food processing. The salami assortments, which were referred to (Victoria Campofrio Salami, Cris-Tim Salami, Semenic Caroli Salami, Sibiu Salami, Agricola, Sinaia Cris-Tim Salami, Ambassador Agricola Salami), were selected by consulting customers based on the questionnaire method. The customer questionnaire was applied in the following supermarkets: Kaufland, Cora, Auschan and Carrefour. There are three types of salami, of the raw - dried type, namely Sibiu Agricola Salami (E250 and E300), Cora Salami (E250, E300 and E301) and Sibiu Reinert Salami (E250 and E301). They contain no substance in the harmful E-category. Ascorbic acid and/or its sodium salt (E 300, 301) do not belong to the suspect E-category, and even have a beneficial effect by contributing to the complete transformation of sodium nitrite into nitrogen oxide, reducing the risk formation of nitrosamines with carcinogenic action. In addition, they have antioxidant action, have antifungal and anti-auric action. The products containing the most "Suspicious E" category additives are Victoria Campofrio salami with 5 E (E 407 E 451, E 621, E 627 and E 631) of the cooked and smoked sausages and Ambassador Agricola salami from category of raw - smoked with 3 E (E 4575, E627 and E631).

Kewords: *monitoring, quality, salami, questionnaire.*

1. Introduction

Current dietary habits favor the food industry and the loss of energy through excessive cooking and food processing. We usually choose our foods according to three major criteria: weight, price and taste. Therefore, we have neglected the real needs of the body, food quality, nutritional value, health and well-being, disease prevention (heart disease, despite the fact that the human and financial cost is far from negligible), living together, preserving the environment, of the planet for the next generations.

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Although the importance of these factors is difficult to estimate accurately, they are fundamental and play an essential role in our choices.

Food pollution is a component part of environmental pollution, which consists of introducing foreign substances into it, which can lead to environmental degradation, may harm people's health and well-being, or cause economic damage by changing natural factors, or created by human activities [1]. Consequences of changes in the environment through human interventions very rarely occur suddenly, as a rule, they appear gradually, slowly. New food preparation technologies, sometimes through chemical treatments, condition some transformations [8]. In some cases, foods are exclusively chemically treated

or simply inevitably or irresponsibly polluted. The purpose of treating food is explained by practical or economic efficiency [2]. Of the more frequent influences of pollutants on the human organism, it is easy to mention [3, 4, 5, 6, 7]: anti-enzymatic, irritant or keratinizing actions, specific and non-specific anti-enzymatic at metabolic level, purines for the synthesis of nucleic acids, hepato-toxic, allergic, mutagenic, teratogenic, oncogenic. It is also worth mentioning the contamination of foods with micro-organisms, including pathogens, which pose great risks for food alteration and consumer health [9].

The analysis carried out in this research aims at identifying the content in the food additives of the studied salami assortments, by implementing the process of monitoring their presence in the salami assortments in the preferences of the consumers surveyed.

2. Material and Method

The salami assortments, which were referred to, were selected by consulting customers based on the questionnaire method. The questions contained in the questionnaire mainly concern the favorite salami, which belong to two categories, namely the category of boiled and smoked sausages, as well as the category of fresh- dried salami. They are: Victoria Campofrio Salami, Cris-Tim Salami, Semenic Caroli Salami, Sibiu Salami, Agricola, Sinaia Cris-Tim Salami, Ambassador Agricola Salami.

Due to the clientele belonging to a large age group, social categories, men and women, we mention that the customer questionnaire was applied in the following supermarkets: Kaufland, Cora, Auschan and Carrefour.

The questionnaire (was developed by us and distributed randomly to customers at the end of each month of the study period (February 1 - May 28, 2017), to be completed at the level of each supermarket considered. questionnaires from each supermarket, resulting in a total of 160 questionnaires for the entire study.

In order to process the answers to the questionnaires, there were identified the products for which there is the highest market demand, belonging to the two categories proposed to be studied in terms of content in food additives, i.e. boiled and smoked salami, and also raw salami.

The products concerned were analyzed according to the manufacturer's inscriptions on the labels, with regard to the ingredients contained, with the highlighting of those belonging to the E-category.

3. Results and Discussions

The study of the frequency of E-food additives, potentially harmful to human health, highlights the fact that among the four food additives belonging to the category E suspect, in boiled and smoked sausages, three (E450, E627 and E631) are found in one product and one (E451) in 5 products (Fig. 1). The E407 with high carcinogenic potential is found in a single product, E621, with controversial action, in three products, and the E575 additive that can be obtained from genetically modified organisms, only in a product (Fig. 1).

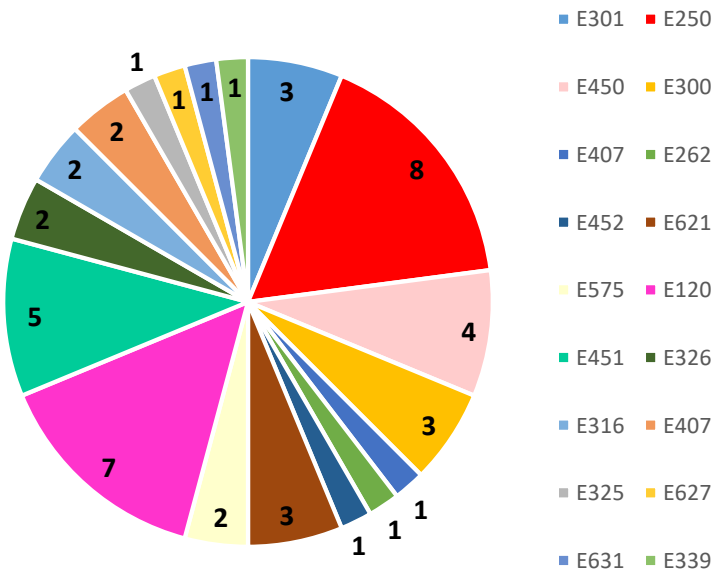

Figure 1. Frequency of food additives with potentially harmful human health identified in boiled and smoked sausages marketed in monitored supermarkets

As regards the frequency of food additives in the E-category, potentially harmful to human health in raw-dried salami, it is noted that the three food additives belonging to the category E suspected (E451, E627 and E631) are found in one product and one in five products (Fig. 2).

Additive E621, with controversial action, in 2 products, and the E575 additive that can be obtained from genetically modified organisms, only in a product (Fig. 2).

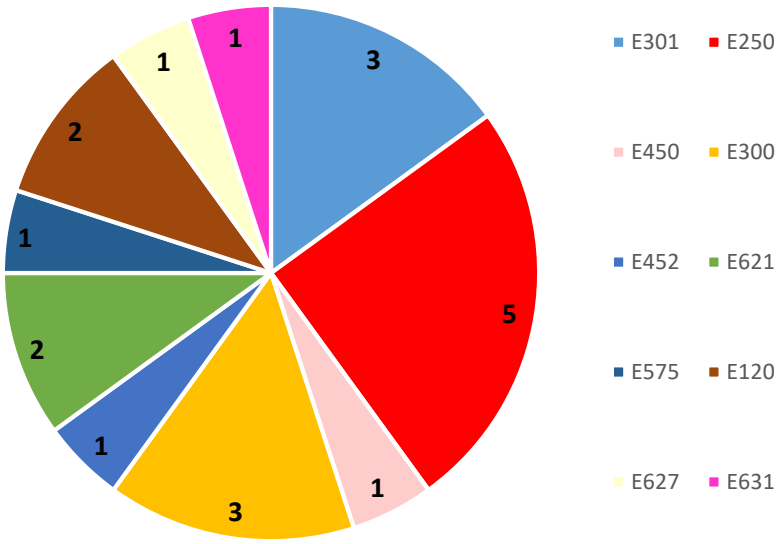

Figure 2. Frequency of food additives with very high harmful potentioal on human health identified in boiled and smoked sausages marketed in monitored supermarkets

Food additives in the category of average risk of damage considered in this study are found with different frequencies in the foods monitored by us.

In cooked and smoked sausages, sugar is found in 2 products (25%), sugars in 6 products (75%), while salt is found in 7 products (87.50%), out of the 12 studied (Fig. 3). However, only 2 products with medium risk of health damage (Fig.4) and salt (for all products and 100% respectively) and sugars for 4 products (80%). The number of additives and ingredients with medium risk of damage, for each category of monitored food, to which they were identified, is presented as follows, depending on the category of salami.

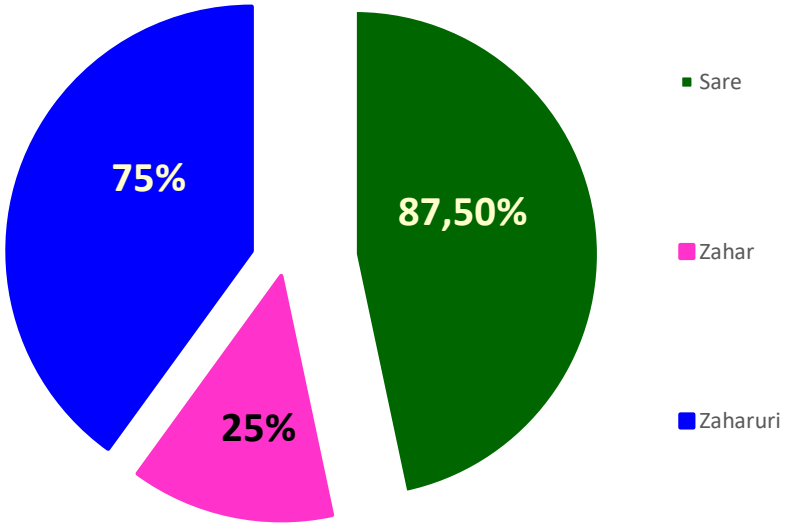

Figure 3. Frequency of food additives with medium human health harmful potential, identified in cooked and smoked salami marketed in monitored supermarkets

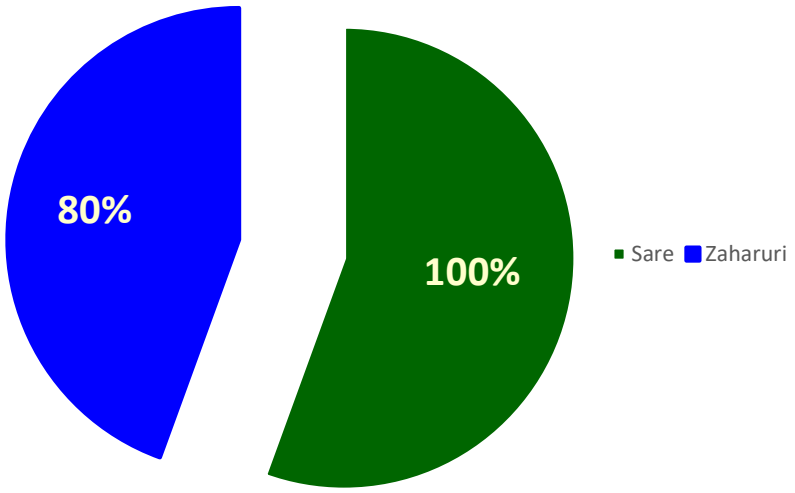

Figure 4. Frequency of food additives with low human health harmful potential, identified in cooked and smoked salami marketed in monitored supermarkets

In the category of cooked and smoked sausages, these are listed below. Criss-Tim Timber Salami, 2 E451 and E575 additives and two medium-risk ingredients, namely sugars. Cris - Tim summer salami, 1 E 407 additive and an ingredient with medium risk of harm, respectively salt. Meda Summer Salami, 2 E 451, E 575 additives and two medium-risk ingredients, namely salt and sugars. Fox extra summer salami, 3 E 451, E 452 and E 621 additives as well as two medium-risk ingredients, namely salt and sugars. Trans - Salam Cris - Tim, 1 E 407 additive and two ingredients with medium risk of damage, namely salt and sugars. Semenic Caroli Salami, 2 E451 E 407 additives and an ingredient with medium risk of harm, respectively sugars. Victoria Campofrio Salami, 5 additives (E 407 E 451, E621, E 627 and E 631) as well as two ingredients with medium risk of damage, namely salt and sugars. Victoria Unicarm Salam, 1 E621 additive with medium risk of damage, namely salt and sugar

From the category of raw - dried salami, these are listed below. Sibiu Agricola Salami, two ingredients with medium risk of damage, namely salt and sugars. Sibiu Cora salami, two ingredients with medium risk of damage, namely salt and sugar. Sibiu Reinert salami, two ingredients with medium risk of damage, namely salt and sugars. Sinaia Cris - Tim Salami, 2 E 452 and E 621 additives, as well as two ingredients with medium risk of damage, namely salt and sugars. Ambassador Agricola Salami, 3 E 4575, E627 and E631 additives as well as two medium-risk ingredients, namely salt and sugars

Boiled and smoked sausages contain 3 compounds in the category of average risk of damage: salt (in 87.5% of the range), sugars (in 75% of the range) and sugar (in 25% of the assortment). Raw - dry salami contain only 2 compounds with a medium risk of salt and salt (for all products and 100% respectively) and sugars for 4 products (80%).

4. Conclusions

Following the study of monitoring the presence of food pollution at the level of two categories of salami marketed in supermarkets in Cluj - Napoca, respectively boiled and smoked and raw - dried, a series of conclusions are reached. The most consumed assortments were identified (the first three in consumer preferences) of the products studied in supermarkets of the categories considered. From the category of cooked and smoked salami, these are: Victoria Campofrio Salami, Cris-Tim Salami, Semenic Caroli Salami. From the category of raw and dried salami, these are: Sibiu Salami, Agricola, Sinaia Cris-Tim Salami, Ambassador Agricola Salami.

There are three types of salami, of the raw - dried type, namely Sibiu Agricola Salami (E250 and E300), Cora Salami (E250, E300 and E301) and Sibiu Reinert Salami (E250 and E301). They contain no substance in the harmful E-category.

Ascorbic acid and/or its sodium salt (E 300, 301) do not belong to the suspect E-category, and even have a beneficial effect by contributing to the

complete transformation of sodium nitrite into nitrogen oxide, reducing the risk formation of nitrosamines with carcinogenic action. In addition, they have antioxidant action, have antifungal and anti-auric action.

The products containing the most "Suspicious E" category additives are Victoria Campofrio salami with 5 E (E 407 E 451, E 621, E 627 and E 631) of the cooked and smoked sausages and Ambassador Agricola salami from category of raw - smoked with 3 E (E 4575, E627 and E631).

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[4] ***, 2003, Regulamentul 1830/2003, al Parlamentului European și al Consiliului privitor la trasabilitatea și etichetarea organismelor modificate genetic și trasabilitatea produselor destinate alimentației umane sau

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[7] ***, 2013, Directiva 2000/13/CE a Parlamentului European si a Consiliului din 20 martie 2000, privind apropierea legislatiilor statelor member referitoare la etichetarea si prezentarea produselor alimentare, precum si la publicitatea acestora

[8] ***, www.topsanatate.ro/euri

[9] ***, www.scribd.com/.../poluarea-si-insalubrizarea-alimentelor