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Nutritional characterization of raw-dried meat products

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Abstract

The paper aims as main objective the study of the nutritional characteristics of the raw-dried salami, produced in the Western part of Romania, during a period of three years, before and after the implementation of the information system for tracking traceability. The following nutritional characteristics have been studied: fat content and total protein substances.

The importance of this study results from a research topic of great interest worldwide namely: ensuring food safety, food quality and continuing concern of meat processors to get healthy and safe products for consumers.

The raw-dried salami samples were analysed in the laboratory for physic-chemical and bacteriological analyses at a private company in Timisoara.

Keywords: traceability, fat, protein, meat products, dry salami

1. Introduction

Traceability defined in 1994 according to the ISO 8402 and ISO 9000/2000 quality standards is "the ability to find history, use or location of an entity by means of recorded identifications"[6].

The official regulation 178/2002 defines traceability as "ability to browse way back for all the food, vegetable or animal raw materials, from whitch are produced the food, or any other substance in all stages of production, processing and distribution". [3]

The aim of traceability is to increase security and safety in the food chain and establishing a traceability model. The model should be acceptable for supply with raw materials production, exchange and consumption of food. [4]

Traceability allow the identification and trace in all stages during the technological processing of food product, feed, of an animal intended for food production or of a substances which follows to be incorporated in food or feed. [4]

Achieving traceability submits both legal requirements and rules (CE Regulation no. 178/2002 on the food safety and Food safety law no. 150/2004, certification and quality assurance), and the requirement for careful action in relation to suppliers and customers. [6]

The successful development of traceability systems, allowing the verification of the origin of food, is an innovative approach which will have a significant impact for legislators, consumers and producers from food industry. [6]

2. Materials and Methods

We analyzed two different samples of dry salami from the same manufacturer from Western Romania. Analyses were achieved quarterly for three years, namely in 2013 before the implementation of an information

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system for tracking traceability and in 2014 and 2015, after it's implementation.

Samples were nutritional analyzed by determining the contents of fat and protein.

Measurements were achieved according to the following standards:

- Content of fat SR ISO 1444:2008 [9]
- Total protein substances SR ISO 937: 2007 [10]

3. Results and discussion

3.1.Determination of fatty substances

According to Order 210/2006 regarding the conditions of admissibility of physic-chemical properties, the maximum limit for the fat content is 50%.

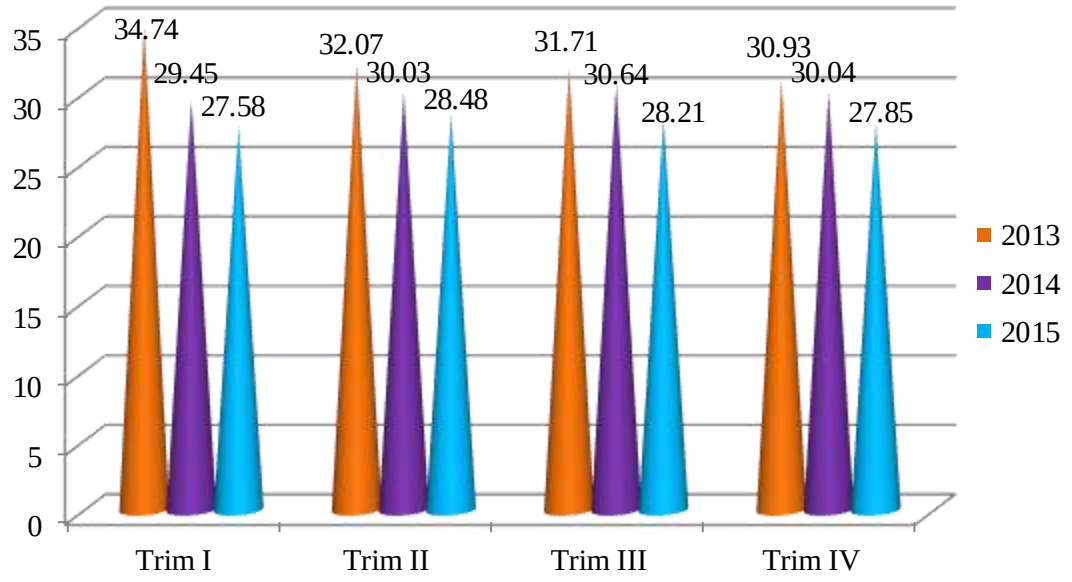

Figure 1. Fat content (%) in studied samples of pork dry salami, 2013 – 2015

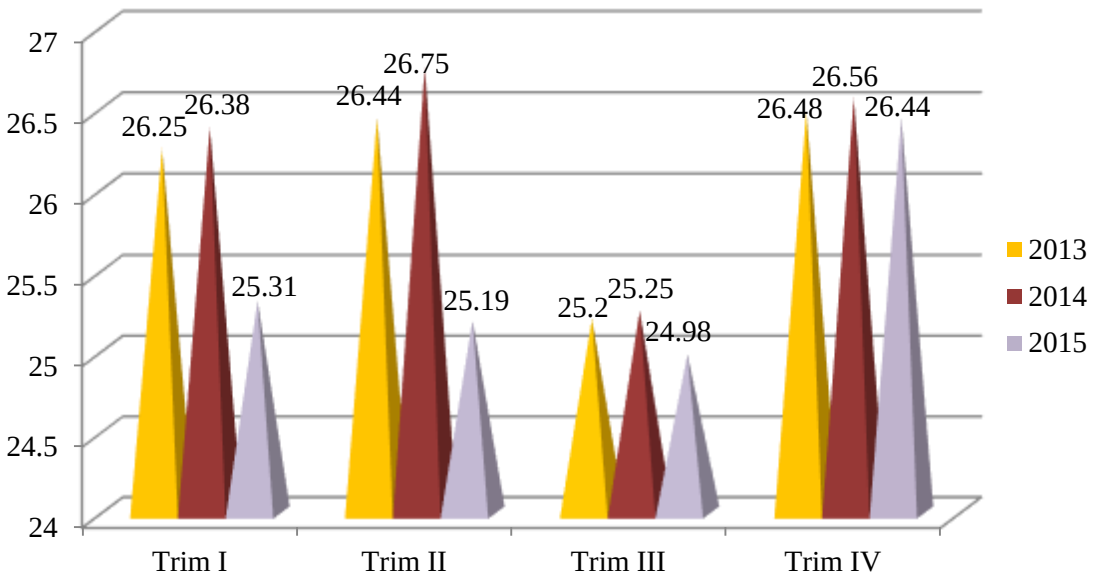

Figure 2. Protein content (%) in studied samples of pork dry salami, 2013 – 2015

Figure 1 shows the values of the fat content in the three experimental years, in 2013, before the implementation of the information system for tracking traceability, the values are 30.93-34.74%, then in 2014-2015, after the implementation of the information system for tracking traceability, the fat content decreases significantly, the values range between 29.45% and 30.64 % (2014) and respectively 27.58-28.48% (2015), due to rigorous control of the input raw materials and output materials into and from the technological process. [8]

The results are in accordance with other studies which show fat contents in Italian raw-dried salami between 12% and 29.6%. The water content of the meat varies inversely with the fat content, between 30.93% and 37.74% (Figure 1), inversely proportional with the water content (35.15-37.8%) (Figure 1), in 2013. [5, 11].

3.2.Determination of total protein in food products of animal origin

According to Order 210/2006 regarding the conditions of admissibility of the physic-chemical properties of meat products, the total protein level should be at least 16%. The values recorded for protein in the studied samples of raw-dried salami, were 25.2-26.25% (in 2013), 25.25-26.75% (in 2014) and 24.98-26.44 (in 2015) (Figure 2). The results are in accordance with literature studies, regarding qualitative index of raw-dried Italian salami, which determinated values of protein content between 24.4% and 37.4%. According to other studies, the level of protein in raw-dried pork salami is 23% and the fat content is 46%. [5, 8, 11]

4.Conclusions

The results show the effectiveness of traceability implementation in the process for obtaining of raw-dred salami in a private company from Timișoara, attention being directed on recordings during the technological process, which provides the opportunity to identify all raw materials, ingredients, additives etc. Entering the production process and operations that they have suffered in the technological flow.

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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