

ITALIAN DRIED MEAT-PRODUCTS: DISTINCTIVE CHARACTERISTICS OF SOME PDO LOCAL PRODUCTS

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Abstract – This study provides compositional figure and nutritional value of some meat products typical of Italian local food tradition characterized by specific geographical identity and traditional preparation techniques. Three local meat products typical of the Piacenza area (Salame, Coppa, Pancetta) were extensively sampled. Data on macronutrients and micro-nutrients content were reported. Data about major fatty acid classes were also reported. Among micronutrients, trace elements (Fe, Zn, Cu, Mn, Se) and vitamins (thiamin, riboflavin, niacin, B6, B12, E) were studied. The presence of additives (salt, nitrate, nitrite) was evaluated. As meat products are an important food item in the Italian diet, the contribution of a portion of these products to RDA for vitamins and trace elements was discussed.

Key Words – Meat product, quality, fatty acids, minerals, trace elements.

I. INTRODUCTION

Italy has a wide number of food products representative of local cultural realities. Most of these local food products are still produced following the consolidated techniques passed down through the generations. An example is the “meat products” that received the attribution of Protected Designation of Origin (PDO) according to EU rules Council Regulation (2081/92) (<http://eur-lex.europa.eu>). This brand offers a further recognition for the identification of the distinctive characteristics of the meat products produced within a delimited geographical area. The purpose of this study was to provide the compositional figure and nutritional value of some PDO meat products typical of the local food tradition of Piacenza area (Lombardia): Salame, Coppa, Pancetta. The content in additives (salt, nitrate, nitrite) was also evaluated.

II. MATERIALS AND METHODS

Samples of Salame, Coppa, Pancetta were provided by five local manufacturers of the Piacenza area (Lombardia). Sampling was carried out following the guidelines of Greenfield and Southgate [1]. Analyses of moisture, ash, protein and lipid were carried out according to AOAC methods [2]. *Fatty acids analysis* was performed as described by Lucarini et al.[3]. *Cholesterol* was determined by enzymatic assay (Boeringer Mannheim GmbH/R-Biopharm). *Minerals* (Ca, Mg, Na, K, P) and *trace elements* (Fe, Zn, Cu, Se) were determined by ICP-OES (Optima 3200XL - Perkin-Elmer) after liquid ashing in a microwave digestion system. Standard Reference Material of bovine muscle (BCR 184) was analysed as check on the accuracy of the analysis.

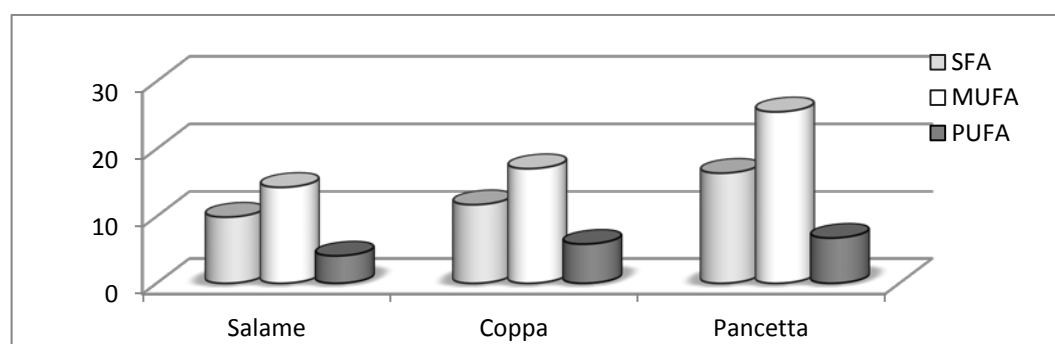
III. RESULTS AND DISCUSSION

Moisture content showed a variability due to the different types of manufactures, ranging from about 29% detected in both Coppa and Pancetta to 35.5% detected in the Salame. The same was observed for the proteins and lipids whose content was strictly dependent on the recipe formulation. Salame showed the highest protein (31.9%) and the lowest lipid (29.8%) contents, whilst Pancetta showed the opposite (protein 14.2%, lipid 51%), Coppa showed intermediate values (protein 28.6%, lipid 36.4%). The lipid content ranged from 29.8 to 51% found in Salame and Pancetta, respectively. Cholesterol content showed marked differences among Pancetta (88 mg/100g) and the other two products where it was in similar amounts (about 110 mg/100g). Minerals, trace elements and vitamins content was reported in Table 1. Salame and Coppa were characterized by high amount of P and K among minerals and of Fe, Zn and Se among trace elements. By contrast Pancetta, characterized by highest fat percentage, had a markedly lower content of these nutrients (Tab.1). Good level of B Vitamin, especially Niacin and B12, were found in both Salame and Coppa, lower amounts were found in Pancetta. Conversely, Pancetta was the richest in the liposoluble vitamin.

Table 1. Minerals, trace elements and vitamins content of the meat-products studied (*Mean values, f.w.*).

	Salame	Coppa	Bacon
Minerals			
Ca	15	24	7
P	264	282	118
Na	1.6	1.7	1.4
K	522	552	244
Mg	33	36	14
Trace elem.			
Fe	1.18	1.84	0.51
Zn	3.94	4.53	1.68
Cu	0.10	0.12	0.05
Mn	0.06	0.05	0.01
Se	0.03	0.04	0.01
Vitamins			
Thiamin	0.41	0.53	0.21
Riboflavin	0.19	0.20	0.06
Niacin	6.11	7.33	1.84
B6	0.11	0.14	0.07
B12	0.52	0.63	0.25
E	0.09	0.23	0.31

Fatty acids classes content of the meat-products studied was reported in Figure 1. Despite the strong differences in total fat content among the meat products, a balance in fatty acids profile among samples was observed, all showing a higher MUFA content compared to the other fatty acid classes (Fig. 1). Salt content was about 4 g/100 g in all the meat products. Nitrate was found in higher amounts in both Coppa and Pancetta (57 and 59 ppm, respectively) compared to Salame (18 ppm). Nitrite was not detectable.

Figure1. SFA, MUFA and PUFA content in the meat-products studied (% of food, f.w.).

IV. CONCLUSION

The variability found in macro and micro-nutrients content well describe the differences among the type of manufactures of the individual meat-products. Salame and Coppa are a rich source of trace elements as Zn, Fe and Se. One portion (50 g) of Salame and Coppa provides about 18% of the Italian RDA for Zn and 36% for Se. The same was observable for Niacin, one portion of Salame or Coppa provides about 19% of the RDA.

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REFERENCES

- Greenfield, H. and Southgate, D.A.T. (2003). Food Composition Data: production, management and use. Barking, UK. Elsevier Science Publisher.
- AOAC (2012). Official Methods of Analysis, 19th ed. Association of Official Analytical Chemists, Arlington, VA
- Lucarini M., Saccani G., D'Evoli L., Tufi S., Aguzzi A., Gabrielli P., Marletta L. and Lombardi-Boccia G. (2013). Micronutrients in Italian ham: a survey of traditional products. Food Chemistry 140: 837-842.