

THREE TRADITIONAL PORTUGUESE SAUSAGES SPECIFICATIONS

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Key words: meat traditional products, protected origin, protected geographical indication.

Background:

The portuguese sausage industry is one of small dimensions, and its future can be difficult or even inexistent, due to the open economy, that allows an offer of food products at a global scale. In this perspective, food products with Denomination of Protected Origin, Protected Geographic Indication and Assured Tradition (Reg. 92/2081/CEE; J.O. no. L 208, 24/07/1992 P. 0001-0008), with solid quality and specification appear as a safe and potencial alternative.

In early times these products appeared as a way to preserve meat, after, and due to its excellent sensorial and gastronomic qualities, they come belonging to the usual portuguese diet, increasing their economic value.

So, traditional portuguese sausages, of high nutritive and gastronomic value are a correct way to improve products as well as the stability of meat products, what is confirmed by aw and pH data assured by the technological processing.

Although a small country, Portugal presents a rich variety of traditional meat products determined by the economical, social, cultural and religious characteristics among the different communities of the country.

The three sausages products presented in this work – *Salpicão*, *Chouriço* and *Painho* are, as indicated by the Guide of Portuguese Quality Products-2000, products with a "nice, slightly smoked and *sui generis* fragrance, and a well flavoured, aromatic and shining fat". Indeed, they are smoked pork sausage, made with fresh meat and solid fat from pork, cut in portions of different sizes, always flavoured with salt, crushed dried garlic, sweet red pepper powder and red pepper paste.

The main differences among these sausages are the size and form, the type of meat used and the time of curing.

Salpicão is a cylindrical smoked sausage, with 15 to 20 cm length, and it has a straight format. It is made from pork loin and tenderloin. The outer covering is made of pork's large intestine.

Chouriço is a large cylindrical smoked sausage, made from neck and trimmings and solid fat. The outer covering is natural pork's intestine.

Painho is made with meat and solid fat cut in portions about 2cm. The outer covering in pork's natural tripe.

Objective:

The results presented in this work, are part of a large ensemble obtained in an applied research plan, which has been developed in last years.

The aim of our plan is the knowledge of the specifications of portuguese traditional sausages and includes the physical and chemical characteristics; the parameters of stability; the microbiological characteristics, not only of hygiene, but also the biochemical and physiological characterization of the stirps selected from this kind of products, which will be inoculated in industrial manufacturing, in order to evaluate their effect on the sensorial characteristics; and the ways of preservation.

These artesanal products have very unic sensorial characteristics and are highly appreciated by the consumers. However, there are no analytical data available and their production has been almost exclusive to household manufacturing.

Methods:

Chemical analysis determined according Portuguese Standards (agreeing with ISO Standards) included water by weight loss at 105±5°C, crude protein by Kjeldahl method, lipids by ether extract, total ash, and carbohydrates by calculation. The energy was calculated by the Atwater coefficients (4 kcal/g of proteins or carbohydrates; 9 kcal/g lipids).

For some samples of different sausages and to confirm the stability we also have determined the aw and pH.

Results and discussion:

CHOURIÇO	Moisture	Lipids	Protein	Total Ash	Carbohydrates	Caloric Value	
	%	%	%	%	%	kcal/100 g	kJ/100 g
Mean	43,7	31,0	18,9	5,3	1,3	357,2	1492,9
Standard Error	0,9	1,0	0,4	0,1	0,2	9,1	37,8
Median	44,9	30,9	18,9	5,1	1,1	347,4	1452,0
Standard Deviation	4,3	4,7	1,8	0,6	1,1	39,5	164,9
Sample Variance	18,8	22,0	3,3	0,3	1,1	1556,7	27198,9
Skewness	-0,1	0,7	-0,1	0,5	0,9	0,6	0,6
Range	14,2	18,9	6,7	1,9	4,0	150,1	627,3
Count	21	21	21	19	19	19	19
Confidence Level (95,0%)	2,0	2,1	0,8	0,3	0,5	19,0	79,5

PAÍNHO	Moisture %	Lipids %	Protein %	Total Ash %	Carbohydrates %	Caloric Value	
						kcal/100 g	kJ/100 g
Mean	58,4	9,1	25,0	5,6	2,0	195,7	817,9
Standard Error	1,3	0,8	0,9	0,1	0,3	5,7	23,8
Median	59,1	9,5	25,4	5,4	1,7	191,5	800,3
Standard Deviation	5,4	3,3	3,7	0,6	1,4	22,7	95,1
Sample Variance	29,7	10,7	14,0	0,3	2,0	517,2	9036,5
Skewness	0,9	-0,2	0,6	2,0	0,7	1,0	1,0
Range	25,4	12,4	16,0	2,4	4,5	92,2	385,6
Count	17	17	17	16	16	16	16
Confidence Level (95,0%)	2,8	1,7	1,9	0,3	0,7	12,1	50,7

SALPICÃO	Moisture %	Lipids %	Protein %	Total Ash %	Carbohydrates %	Caloric Value	
						kcal/100 g	kJ/100 g
Mean	49,7	20,7	22,0	5,3	2,3	283,8	1186,1
Standard Error	3,5	4,8	1,5	0,3	0,6	38,9	162,5
Median	52,9	16,3	23,2	5,6	1,8	235,9	985,9
Standard Deviation	11,6	15,8	5,0	1,0	2,0	129,0	539,1
Sample Variance	135,7	249,6	24,9	1,0	3,8	16631,5	290592,3
Skewness	-2,8	2,9	-2,7	-2,9	1,7	2,9	2,9
Range	41,3	55,7	18,5	3,5	6,8	456,1	1906,5
Count	11	11	11	11	11	11	11
Confidence Level (95,0%)	7,8	10,6	3,4	0,7	1,3	86,6	362,1

The analytical data confirm a reproducible composition and a predictive quality for these traditional products, what means it is possible to implement their production by an industrial way, transcribing the artisan's way of production.

Conclusions:

According to the CE Regulation (Reg. 92/2081/CEE; J.O. no. L 208, 24/07/1992 P. 0001-0008), food products with Denomination of Protected Origin, Protected Geographic Indication and Assured Tradition, should satisfy a number of purposed specifications. In this specifications are included the overall composition and the caloric value.

In this perspective this work is an usefull contribution for the characterization of portuguese traditional sausages.

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