



AGROSYM

BOOK OF PROCEEDINGS



*XVI International Scientific Agriculture Symposium
"Agrosym 2025"
Jahorina, October 2-5, 2025*



AGRO 2025
sym

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**PORTUGUESE CONSUMERS' PREFERENCE REGARDING THE
PRESENTATION OF PROTECTED DESIGNATION OF ORIGIN
TRANSMONTANO GOAT CHEESE**

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Abstract

Data were collected from a sample of 120 individuals aged between 18 and 84 years old through the application of a questionnaire at the National Agricultural Fair, held from June 3 to 11, 2023, at the National Exhibition Center in Santarém, Portugal. Subsequently, the data were analyzed using descriptive statistics, revealing that the majority of the respondents were male (52.5%), had secondary (25.0%) or higher (41.7%) education qualifications, lived in households of 2 (35.8%) or 3 people (24.2%) with a monthly net income between 501 and 1,000 euros (20.8%) or 1,001 and 3,000 (40.3%) in the districts of Santarém (25.8%), Lisboa (15.8%), or Leiria (9.2%). The majority (84.5%) consumed cheese more than once a week. They preferred cheese made with raw milk (68.3%) from goat (55.0%), with a curing time of around 30 days (55.0%) or 90 days (51.7%). They also preferred the whole cheese (61.7%), certified (59.1%) with Protected Designation of Origin (PDO), Protected Geographical Identification (PGI), or Organic Agriculture (OA). As for the cheese size, the respondents preferred wedges of 220 and 400 g. The most important attribute for consumers proved to be the price, followed by the type of milk (cow, sheep, goat, mixed), curing time, cheese size/portion, presentation form (whole, half, wedge), type of milk (pasteurized, raw), certification (PDO, PGI, OA) and whether the cheese had spices/aromatic herbs. The study reveals that the commercial strategy of the producer group (LEICRAS) should prioritize smaller portions without using spices/aromatic herbs, since opting for smaller-sized cheese entails higher operating costs.

Keywords: *Consumption, Cheese, Market Research, Portugal, Goat.*

Introduction

The objective of the work was to identify consumer preferences for the presentation of the goat cheese that LEICRAS (producers' association) produces, and based on these preferences, develop a secondary presentation that was appealing and differentiated, in line with the strategy suggested by Matos (2015).

The starting point for the work was developed based on the range of cured cheeses that are produced by LEICRAS, which includes three curing times: two with or without chili peppers and a spicy cheese. Regarding the presentation, there were the possibility of two formats of ± 700 g and ± 400 g, and, concerning the presentation of the ± 700 g cheese, it could be presented in halves. Any of these forms could be marketed with or without primary vacuum packaging. With such a diverse range of products, the strategy was to develop a different form of presentation, in a ± 220 g wedge obtained from the fractionation of the ± 700 g cheese. Underlying this strategy was the fact that a smaller portion of cheese could captivate consumers who do not regularly consume cheese and present a portion that would require lower financial expenditure for consumers.

In terms of packaging, the strategy was to develop secondary packaging in cardboard, where whole cheese weighing ± 700 g would be packaged or, alternatively, two halves or three wedges weighing ± 220 g.

Materials and Methods

To carry out this market research, a sample of 120 individuals was collected at the National Agriculture Fair, which took place on June 3 and 11, 2023, at the National Exhibition Center in Santarém, Portugal. Data collection took place on June 3, 4, and 5, with visitors to the fair participating voluntarily in the research. The questionnaire took no more than ten minutes to complete and did not require the consumer's identification, guaranteeing the respondent's anonymity.

The research questionnaire was developed at the Sensory Analysis Laboratory, Agriculture School, Polytechnic Institute of Bragança, and submitted for approval by LEICRAS technicians. The questionnaire included two sections. The first section comprised questions about the consumer's sociodemographic profile, and the second section contained questions about the consumer preferences for cheese as well as the importance consumers attached to different cheese attributes.

Subsequently, the data were analyzed using descriptive statistics, namely a central tendency measure (mean) and several dispersion measures (maximum, minimum, and standard deviation) for the age variable (quantitative variable) and frequencies for the nominal and ordinal variables (qualitative variables) as referred by Marôco (2021). The data was treated using Excel software to produce tables and figures based on the market research results.

Results and Discussion

The sample consisted of individuals aged between 18 and 84 years old. The average age was 52.78 years (± 14.497). As can be seen in Table 1, the majority were between 25 and 64 years old (70.0%), male (52.5%), had secondary (25.0%) or higher (41.7%) education, lived in households of 2 (35.8%) or 3 people (24.2%) with a monthly income between 501 and 1,000 euros (20.8%) or 1,001 and 3,000 euros (40.3%) in the districts of Santarém (25.8%), Lisboa (15.8%) or Leiria (9.2%). Similar profiles were identified by Mendonça et al. (2017) and Fernandes et al. (2017) in two different consumer samples from Bragança city, Portugal. Respondents prefer to consume cheese made with raw milk (68.3%) and goat's milk (55.0%), as shown in Figure 1.

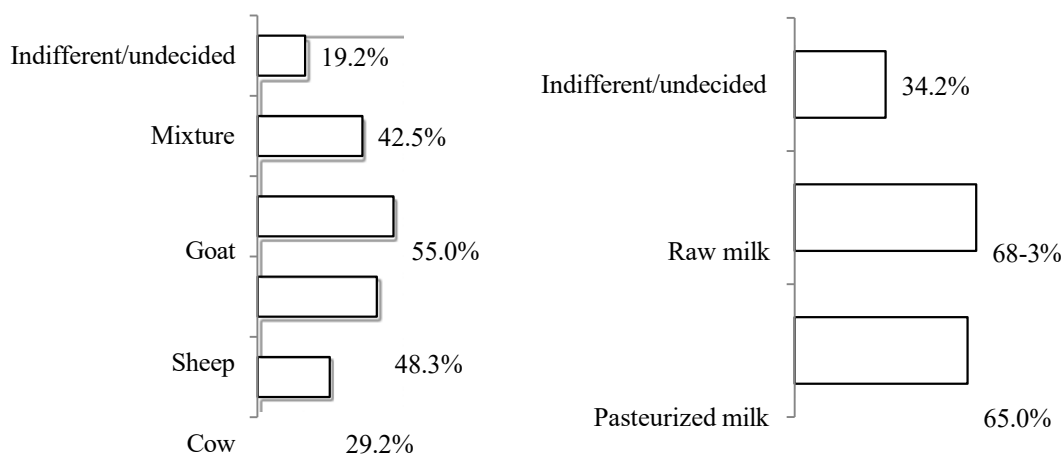


Figure 1. Milk characteristics (N = 120).

Source: Authors' elaboration based on the questionnaire survey results.

Table 1. Sample characterization (N = 120).

Variable	Group	Frequencies	
		n	%
Gender	Male	63	52.5
	Female	57	47.5
Age group	18 to 24 years	8	6.7
	25 to 64 years	84	70.0
	65 or more years	28	23.3
Educational qualifications	1 st Cycle (4 years)	14	11.7
	2 nd Cycle (6 years)	10	8.3
	3 rd Cycle (9 years)	16	13.3
	Secondary (12 years)	30	25.0
	Higher Education	50	41.7
Household monthly net income	< 500 euros	4	3,3
	501 to 1,000 euros	25	20,8
	1,001 to 3,000 euros	58	40,3
	3,001 to 5,000 euros	21	17,5
	> 5,000 euros	7	5,8
District of residence	Missing	5	4.2
	Aveiro	5	4.2
	Braga	3	2.5
	Bragança	5	4.2
	Castelo Branco	5	4.2
	Coimbra	9	7.5
	Leiria	11	9.2
	Lisboa	19	15.8
	Portalegre	8	6.7
	Porto	3	2.5
	Santarém	31	25.8
	Setúbal	5	4.2
	Viseu	5	4.2
	Other	6	4.8
Household size	1 person	14	11.7
	2 people	43	35.8
	3 people	29	24.2
	4 people	20	16.7
	> 4 people	14	11.7

Source: Authors' elaboration based on the questionnaire survey results.

Respondents prefer to consume cheese with a curing period of around 30 days (55.0%) or 90 days (51.7%), whole (61.7%), and certified (59.1%) with Protected Designation of Origin, Protected Geographical Identification, or Organic Agriculture as referred by Cabo et al. (2015). As for size, preference is given to smaller portions of cheese, namely 220 g and 400 g, with 40.8% and 40.0%, respectively. The composition of several wedges with different flavors/textures recorded a residual preference (5.0%), as shown in Figure 2.

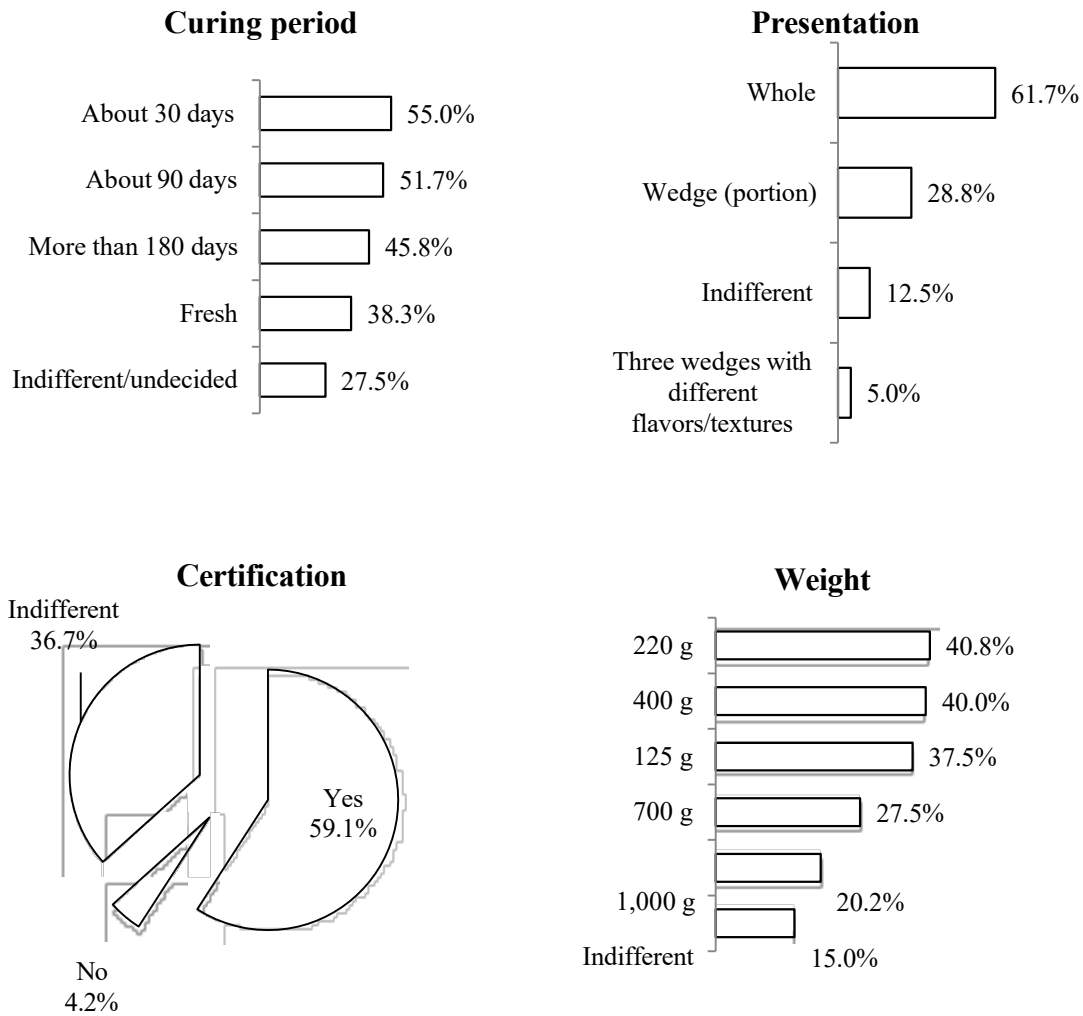


Figure 2. Cheese characteristics preferences (N = 120).

Source: Authors' elaboration based on the questionnaire survey results.

Figure 3 shows that only 45.0% of respondents like cheese with spices or aromatic herbs. Of these 54 interviewees, 30.0% prefer cheese with chopped chili pepper. Spicy with red pepper powder was selected by 15%, and other aromatic herbs were also mentioned, namely rosemary, garlic, nuts, coriander, basil, thyme, nettles, cumin, and olive oil.

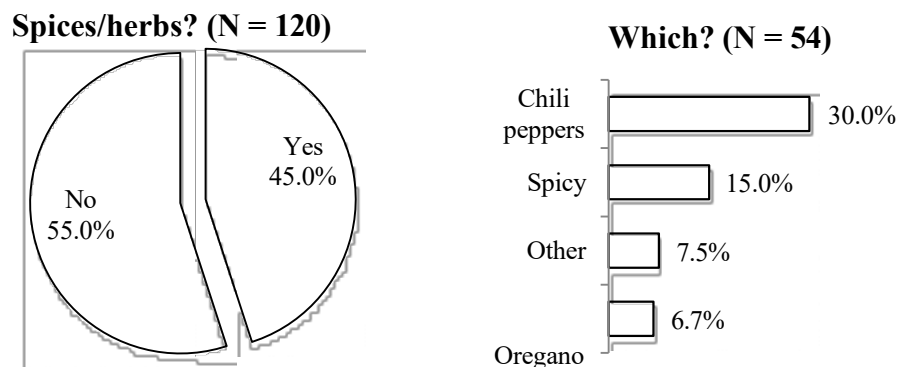


Figure 3. Cheese with spices or aromatic herbs preferences.

Source: Authors' elaboration based on the questionnaire survey results

As in a study carried out in Bragança city, Portugal (Mendonça et al., 2017), an overwhelming majority of consumers (87.5%) eat cheese more than once a week (Figure 4). In fact, in the cited study, this percentage was very similar (86.5%), suggesting that cheese consumption habits are very similar all over the country.

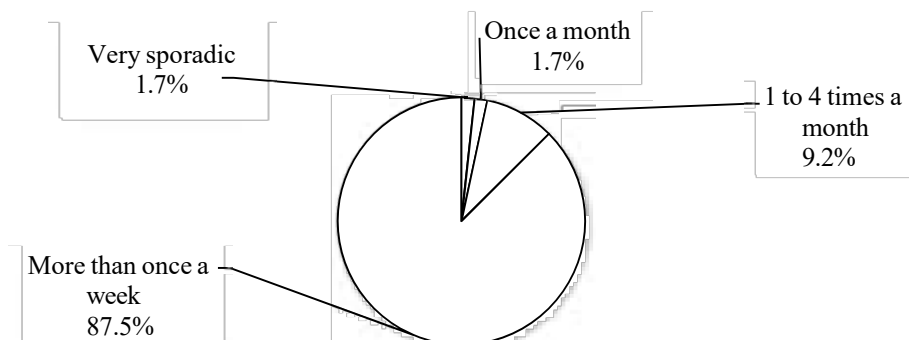


Figure 4. Cheese consumption frequency (N = 120).

Source: Authors’ elaboration based on the questionnaire survey results.

Table 2 reveals the importance that consumers attribute to some of the attributes that influence their cheese purchase on the scale: 1 (unimportant), 2 (not very important), 3 (important), 4 (very important), and 5 (extremely important). As can be seen, the most important attribute for consumers was price (92.4%), followed by the milk’s species of origin (Cow, Sheep, Goat, Mixture), with 90.9%; the curing time (85.8%); the size of the cheese/portion (84.1%); the form of presentation (whole, halves, wedge) with 82.6%; the use of pasteurized or raw milk (78.3%) also referred by Cabo et al. (2015); the certification (DOP, IGP, AB), as referred to by Cabo et al. (2015), with 75.8%; and, the use of spices or aromatic herbs (60.8%).

Table 2. Importance of cheese attributes (%) (N = 120).

Order	Attributes	1	2	3	4	5
1	Price	2.5	5.0	15.8	23.3	53.3
2	Species of origin of milk	7.5	1.7	11.7	42.5	36.7
3	Cheese-curing period	10	4.2	25.0	40.8	20.0
4	Cheese size/portion	10.0	5.8	28.3	30.0	25.8
5	Presentation form	10.0	7.5	16.7	36.7	29.2
6	Use of raw or pasteurized milk	8.3	13.3	25.8	30.8	21.7
7	Certification of the cheese	10.0	14.2	15.0	30.0	30.8
8	Use of spice or aromatic herbs	25.0	14.2	20	27.5	13.3

Source: Authors’ elaboration based on the questionnaire survey results.

Consumers’ responses were quite diverse when asked about the opportunity to buy a box with three wedges of goat cheese and their preferred composition of textures and flavors. For this purpose, all PDO Transmontano goat cheese were considered, namely, normal curing (60 days of curing), old (more than 90 days of curing), extra-long curing (more than 120 days of curing), old spicy, and spicy Transmontano goat cheese.

Table 3. Three-Wedge Box Purchase Options (N = 120).

Combinations	Frequencies	
	n	%
Normal curing, Old, Extra-long curing	22	18,3
Normal curing, Normal curing, Normal curing	18	14,9
Normal curing, Old, Spicy old	16	13,3

Source: Authors' elaboration based on the questionnaire survey results.

Table 3 presents the three combinations that stand out: normal curing, old, extra-long curing (18.3%); box with three wedges of cheese with normal curing (14.9%); and normal curing, old, spicy old (13.3%).

Conclusions

The surveyed consumers were previously informed that the requested collaboration in the market research was related to the marketing strategy for cured goat cheese. So, it was assumed that the respondents had minimal knowledge about cheese, especially goat cheese, which was cured and semi-hard or hard paste.

Consumers' choices for a wedge or half cheese compared to a whole cheese are conditioned by the price factor reflected by the purchase unit, although consumers prefer whole units. This perception can be valued by grouping it with the strategy to be implemented, which presents the alternative of two halves of cheese and three wedges on the cardboard packaging.

When asked about the opportunity to buy a box with three wedges of goat cheese and their preferred texture/flavor composition, a significant number of consumers expressed interest in buying a package with three wedges of the same type of cheese. In these cases, the justification given by consumers was that an entire unit was left open for a long time, and, generally, due to its size and regular consumption, it needs to be cleaned frequently, or the quality of the cutting surface is lost.

Developing a business strategy in which parts of a unit (wedges) are valued rather than the unit may be a good option if the costs associated with the alternative of producing a new line with units of similar weight to a wedge are considered.

This work also highlights the perception of consumer preferences for cheese made without the use of spices or aromatic herbs and the importance of the curing time, which may influence the producers' association strategy regarding the size of batches with different curing times.

Acknowledgment

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