

INNOVATION IN TRADITIONAL TRÁS-OS-MONTES PRODUCTS: CONSUMER PERCEPTION ON EXTRA LONG MATURATION GOAT CHEESE

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1. Introduction

Traditional agricultural and agri-food products are at the center of attention as instruments for enhancing agricultural and rural development. These products are seen as a central element in space planning, landscape preservation and nature conservation, and in combating depopulation of poor rural areas (Tibério et al., 2008). This research was based on data from a survey on the consumption preferences of goat cheese from Trás-os-Montes region, Portugal. The study was developed within the ProDeR Project - PA 49.481, measure 4.1 - Cooperation for Innovation - Development of “Serrana” goat cheese with extra-long maturation as a result of a partnership between a research unit and a cooperative. The objectives of the study were to identify the consumer profile, cheese consumption habits and to compare consumers' perception about the characteristics of cheeses with different maturation periods (2, 7 and 12 months).

2. Material and Methods

To achieve these objectives, a quantitative, analytical, cross-sectional and observational study was developed based on a sample of 155 consumers who went to a supermarket in Bragança on May 28 and 29, 2015. To collect the data, a questionnaire was used with questions about the characteristics of the consumer, the frequency of cheese consumption and the sensorial perceptions of consumers (appearance, aroma, flavor, perception of fat content, hardness, and perception of salt content) of the cheeses with different maturation periods. The three cheeses were presented to consumers in a plastic dessert plate with the cheese code inscribed on the plate next to the slice of cheese. Each slice was about 5 millimeters thick. There was also a plate with three toasts, a napkin and a glass of water. Consumers were informed that they should clean the palate between tasting each of the three cheese slices since the slices were supplied at the same time. To cleanse the palate, consumers could turn to water and/or toasts. The data treatment was carried out using SPSS 23.0 and involved the use of descriptive statistics to identify the consumers'

profile and their cheese consumption habits. The Friedman test was used to verify if there were statistically significant differences between the three cheeses at a significance level of 1%.

3. Results

Consumers' age varied between 17 and 86 years old. In average, consumers were 52.9 years old (\pm 15.62). The majority of consumers was male (51.6%), married (53.0%), living in households with two people (30.3%), with a net monthly household income between € 1,001 and 3,000 (30.3%) and a cheese frequency consumption of more than once a week (86.5%) (Table 1).

Table 1. Consumers' profile and cheese consumption frequency

Variable	Groups	Number	Percent
Gender (n = 155)	Male	51.6	80
	Female	48.4	75
Educational level (n = 155)	Incomplete 1 st cycle	3.2	5
	1 st cycle	17.4	27
	2nd cycle	7.7	12
	3rd cycle	9.0	14
	Secondary	21.9	34
	Higher	40.6	63
Civil status (n = 151)	Married	53.0	80
	Single	27.2	41
	Divorced	6.6	10
	Widow	6.6	10
	Stable relationship	6.6	10
Household members (n = 152)	1 person	11.8	18
	2 persons	30.3	46
	3 persons	23.0	35
	4 persons	23.7	36
	5 or more persons	11.2	17
Net monthly household income (n = 151)	Less than € 500	12.6	19
	€ 500 to 1,000	19.9	30
	€ 1,001 to 3,000	50.3	76
	€ 3,001 to 5,000	16.6	25
	More than € 5,000	0.7	1
Cheese consumption frequency (n = 155)	Once a month	1.9	3
	One to four times a month	11.6	18
	More than once a week	86.5	134

It was possible to identify significant differences, at a significance level of 1%, in all

the characteristics considered except for the perception of salt content (p-value < 1%). Regarding the appearance, aroma and flavor, cheese 1 (cheese with 2 months of maturation) was preferred. So, it was not surprising that the overall evaluation and the intention to purchase of this cheese were the best. Regarding the hardness, it was the cheese 3 (cheese with a larger maturation period) that, in the opinion of the consumers, was the hardest one (Table 2).

Table 2. Sensorial characteristics, purchase intention and overall evaluation

	Mean rank			P-value
	Cheese 1 (2 months)	Cheese 2 (7 months)	Cheese 3 (12 months)	
Appearance	2,15	1,92	1,93	0,010*
Aroma	2,15	1,94	1,91	0,010*
Flavor	2,24	1,94	1,82	0,000*
Hardness	1,61	2,03	2,36	0,000*
Perception of salt content	1,90	2,00	2,10	0,018
Perception of fat content	1,85	2,11	2,05	0,002*
Intention to purchase	2,23	1,96	1,81	0,000*
Overall evaluation	2,19	1,95	1,85	0,001*

* There are significant differences at the significance level of 0.01.

4. Conclusion

Consumers preferred the cheese with two months of maturation. Effectively, it was the cheese that had a better overall evaluation and registered the best intention to purchase probably because it was considered the cheese with better appearance, aroma and flavor. Consumers also considered the cheese with 7 months had a higher fat content and the cheese with 12 months was the hardest one. Finally, consumers did not detect differences in the salt content of the three cheeses.

5. Reference

Tibério L, Cristóvão A, Abreu S. (2008) Microproduções Agrícolas e Desenvolvimento Sustentável em Regiões Periféricas, Revista Portuguesa de Estudos Regionais, 17 (1), 5-24

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