



AGROSYM

BOOK OF PROCEEDINGS



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



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PORTUGUESE CONSUMERS' PREFERENCE REGARDING THREE PROTECTED DESIGNATION OF ORIGIN TRANSMONTANO GOATLING BUTCHER PIECES

António José FERNANDES^{1*}, Fernando SOUSA², Dina AVEIRO³, Maria Isabel RIBEIRO¹

¹CIMO, LA SusTEC, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

²LAS, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

³ESA, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

*Corresponding author: toze@ipb.pt

Abstract

Each half carcass was divided into three pieces: a leg, a shoulder, and a rib. So, to identify consumers' preferences about the three cuts, a questionnaire was applied at the National Agricultural Fair between June 3 and 11, 2023, in Santarém, Portugal. The sample was composed of 118 consumers aged between 20 and 81 years. Later, descriptive statistics and the Friedman test were used to analyze the data. The majority of the consumers were between 25 and 64 years old (72.9%), male (69.5%), had secondary (25.4%) or higher (36.4%) education, lived in households of two (40.7%) or three people (23.7%) with a monthly net income between 1,001 and 3,000 (44.9%) or 3,001 and 5,000 euros (21.2%) and lived in the districts of Santarém (30.5%), Lisbon (15.3%) and Leiria (11.0%). The frequency of goatling meat consumption is very diverse. In fact, 31.4% said they eat it sporadically, 31.4% more than once a week, 25.4% once a month, and 11.9% one to four times a month. When asked about the likelihood of buying the different cuts, 86.5% of respondents said it was likely or very likely that they would buy the rib, 80.6% the leg, and 79.6% the shoulder. No differences were found in the purchase probability between the leg and shoulder (p -value = 0.879). Still, a preference for the rib was confirmed (p -value < 0.05). The leg, the rib, and the shoulder can be sold between 13.09 and 22.41 euros/kg, 12.92 and 22.96 euros/kg, and 13,66 and 23,64 euros/Kg, respectively.

Keywords: *Consumption, Butcher pieces, Market Research, Portugal, Goat.*

Introduction

The objective of the work was focused on the complete valorization of the cuts developed in the goatling carcass. Each half carcass was divided into three pieces: a leg, a shoulder, and a rib. What would be the consumer's preference regarding any of these butcher's pieces? Did consumers associate a different price with their preference, that is, did they value the three pieces differently monetarily? To answer these questions, a questionnaire was developed using the price analysis method proposed by Van Westendorp (1976). Van Westendorp's price sensitivity meter provides a set of specific prices that can help decide when an enterprise wants to introduce a new product in the market. The method uses quantitative data from respondents who answer four questions about the product:

- 1) What price would consumers consider the product a bargain (a good quality/price ratio)? ("cheap").
- 2) What price would consumers consider the product so cheap that they would doubt its quality? ("very cheap, potential scam").
- 3) What price would consumers consider the product slightly more expensive, but still consider purchasing it? ("expensive").
- 4) What price would consumers consider the product so expensive that they would not consider purchasing it? ("very expensive").

Materials and Methods

To carry out this market study, a sample of 118 individuals was collected at the National Agriculture Fair (Ribatejo Fair), which took place between June 3 and 11, 2023, at the National Exhibition Center in Santarém, Portugal. Data collection took place on June 3 to 5 with visitors to the fair who, when questioned, decided to participate in the study voluntarily. The questionnaire took no more than ten minutes to complete and did not require personal identification to guarantee the respondent's anonymity.

The questionnaire was developed at the Sensory Analysis Laboratory from the Agriculture School, Polytechnic Institute of Bragança, and submitted for approval by Capriserra (goatling producers' association) technicians.

Data analysis involved the use of statistical software suitable for the Social Sciences. In this context, descriptive statistics were used to calculate the mean (central tendency measure) and maximum, minimum, and standard deviation (dispersion measures) and the Confidence Interval at 95% for the quantitative variables (age and price) and frequencies (absolute (n) and relative (%)) for the qualitative variables (nominal and ordinal variables).

In addition to descriptive statistics, the Friedman test was performed to compare the probability of the consumer purchasing the different pieces (rib, shoulder and leg), and in situations where significant statistical differences were identified, multiple comparisons were done with the Wilcoxon test to identify the differences (Pestana & Gageiro, 2014; Marôco, 2021). The statistical tests were applied at a significance level of 5%. The collected data were also subjected to Van Westendorp (1976) price analysis using Excel software (Martins, 2019).

Results and Discussion

Figure 1 shows that the frequency of goatling meat consumption is very diverse. In fact, 31.4% said they do it sporadically, 31.4% more than once a week, 25.4% once a month, and 11.9% one to four times a month. The sporadic consumption occurs mainly during two annual celebrations, Easter and Christmas (Fernandes et al., 2015), and most goatling meat production is consumed locally (Cabo et al., 2016).

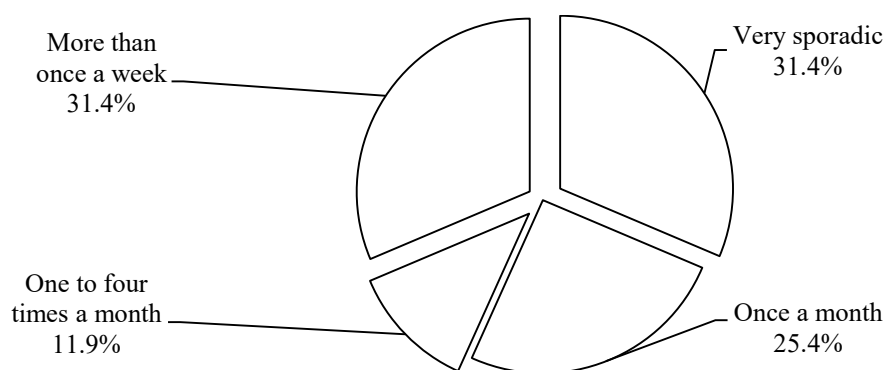


Figure 1. Frequency of goatling meat consumption (N = 118).

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

The sample consisted of individuals aged between 20 and 81 years. The average was 54.1 years (± 14.498). As can be seen in Table 1, the majority of respondents were aged between 25 and 64 years old (72.9%), male (69.5%), had secondary (25.4%) or higher (36.4%) education, lived in households of 2 (40.7%) or three people (23.7%) with a monthly income between 1,001 and 3,000 (44.9%) or 3,001 and 5,000 euros (21.2%) and lived in the districts of Santarém (30.5%), Lisboa (15.3%) and Leiria (11.0%).

Table 1. Sample characterization (N = 118).

Variable	Group	Frequencies	
		n	%
Gender	Male	82	69.5
	Female	36	30.5
Age group	18 to 24 years	5	4.2
	25 to 64 years	86	72.9
	65 or more years	27	22.9
Educational qualifications	Incomplete 1st cycle	1	0.8
	1 st Cycle (4 years)	14	11.9
	2 nd Cycle (6 years)	12	10.2
	3 rd Cycle (9 years)	18	15.3
	Secondary (12 years)	30	25.4
	Higher Education	43	36.4
Household monthly net income	< 500 euros	5	4.2
	501 to 1,000 euros	23	19.5
	1,001 to 3,000 euros	53	44.9
	3,001 to 5,000 euros	25	21.2
	> 5,000 euros	6	5.1
	Missing	6	5.1
District of residence	Missing	7	5.9
	Aveiro	3	2.5
	Braga	2	1.7
	Bragança	7	5.9
	Castelo Branco	3	2.5
	Coimbra	5	4.2
	Faro	3	2.5
	Guarda	1	0.8
	Leiria	13	11.0
	Lisboa	18	15.3
	Portalegre	4	3.4
	Porto	5	4.2
	Santarém	36	30.5
	Setúbal	5	4.2
	Viana do Castelo	2	1.7
	Vila Real	1	0.8
	Viseu	2	1.7
Other (South Africa)	1	0.8	
Household size	1 person	8	6.8
	2 people	48	40.7
	3 people	28	23.7
	4 people	25	21.2
	> 4 people	9	7.6

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

When asked about the likelihood of buying the different cuts of goatling from the Trás-os-Montes region, 86.5% of respondents said it was likely or very likely that they would buy the rib, 80.6% the leg, and 79.6% the shoulder, as can be seen in Figure 2.

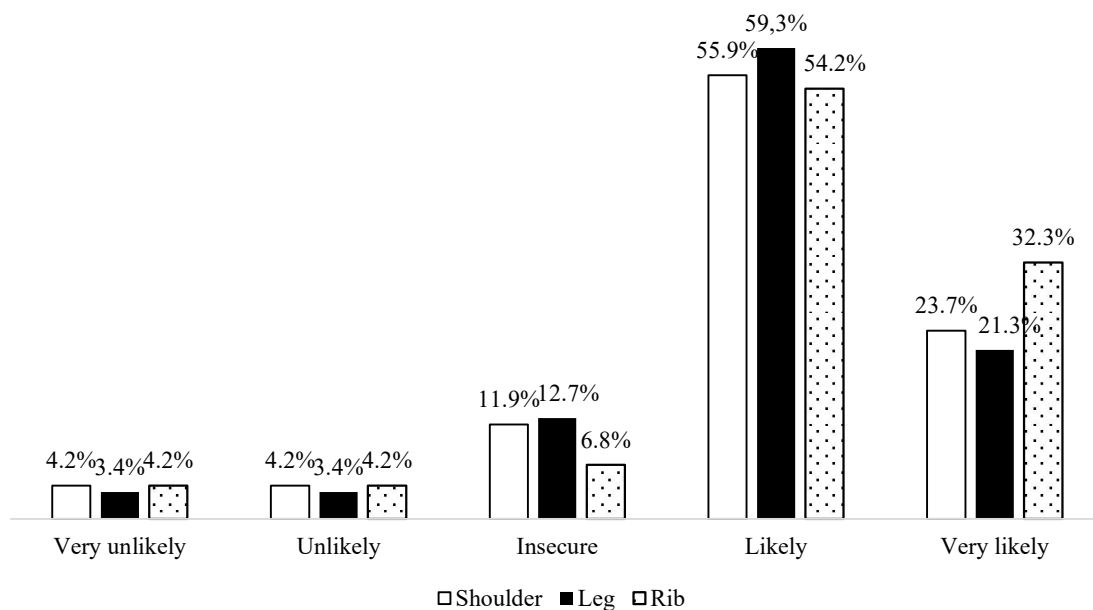


Figure 2. Probability of purchasing the different butcher pieces (N = 118).
 Source: Authors’ elaboration based on the questionnaire survey results.

The results of the Friedman test showed statistically significant differences in the probability of purchasing the three butcher pieces (p-value = 0.031). The Wilcoxon test revealed no statistically significant differences between the leg and shoulder (p-value = 0.879). However, as previously mentioned, a preference for the rib compared to the two other butcher cuts was confirmed by the Wilcoxon test (p-value < 0.05).

Figure 3 shows that most respondents prefer to buy meat by the piece without seasoning (55.9%). Only 31.4% prefer the seasoning suggested on the packaging, while 10.2% prefer it already seasoned and ready to cook.

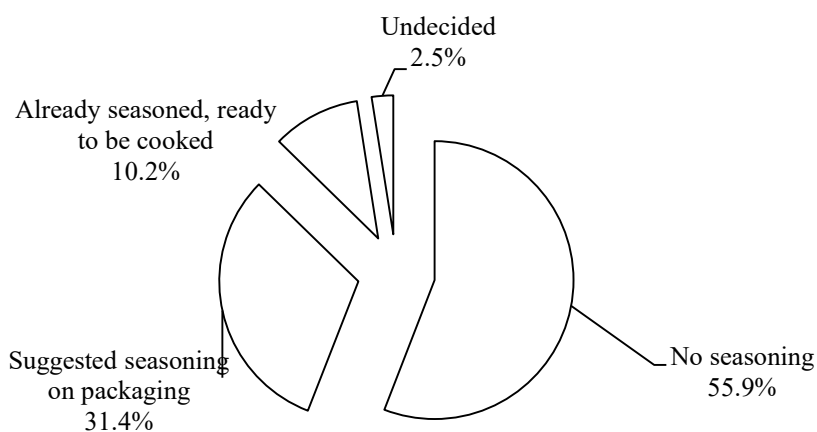


Figure 3. Seasoning preferences (N = 118).
 Source: Authors’ elaboration based on the questionnaire survey results.

Table 2 shows that the leg can be sold between 13.09 and 22.41 euros/kg. It should be sold at a price above 8.76 euros/Kg because the consumer would doubt the quality of the product and not buy it. Above 29.12 euros/kg would be very expensive.

Concerning the shoulder, the reference values place the sale price between 13.66 and 23.64 euros/kg, and in any case, the price must not be below 9.19 euros, the limit at which it is of dubious quality. Also, the price should not be above 29.66 euros, the price at which it is prohibitive.

The rib has as reference values a marketing range between 12.92 and 22.96 euros/kg, with a minimum limit for the commercial value that must be above the value considered to be of dubious quality (9.09 euros) and a maximum limit of 29.36 euros, as this is a value from which it becomes prohibitive.

Table 2. Prices (euro/kg) (N = 118).

Piece	Attributes	Minimum	Maximum	Mean	Standard deviation	95% CI
Leg	Cheap	7.00	35.00	13.09	5.522	[12.09; 14.10]
	Expensive	9.00	45.00	22.41	8.715	[20.82; 24.00]
	Too expensive	13.00	45.00	29.12	10.584	[27.19; 31.05]
	Too cheap	7.00	24.00	8.76	3.142	[8.19; 9.34]
Shoulder	Cheap	7.00	35.00	13.66	5.530	[13.66; 14.67]
	Expensive	9.00	45.00	23.64	8.748	[22.05; 25.24]
	Too expensive	13.00	45.00	29.66	10.211	[27.80; 31.52]
	Too cheap	7.00	21.00	9.19	3.578	[8.53; 9.84]
Rib	Cheap	7.00	29.00	12.92	4.961	[12.01; 13.82]
	Expensive	9.00	45.00	22.96	8.423	[21.42; 24.49]
	Too expensive	12.00	45.00	29.36	10.086	[27.52; 31.19]
	Too cheap	7.00	21.00	9.09	3.452	[8.46; 9.72]

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

The Van Westendorp sensitivity meter for price reveals that the Leg is the butcher's piece with a higher optimum price (17.00 euros/Kg). This is the piece most valued by the consumers, as they are willing to pay more. Table 3 also shows that the rib and the shoulder have the same optimum price (16.00 euros/Kg).

According to Fernandes et al. (2015), goatling meat is a high-quality product that is recognized as such by consumers. However, the price the consumer is willing to pay is still not sufficiently high to make it an attractive activity in terms of profitability, considering the decrease in the number of farms that produce goatling meat.

Table 3. Van Westendorp sensitivity meter for price (euro/kg) (N = 118).

Piece	Undifferentiated value	Optimum value	Upper marginal value	Lower marginal value
Leg	16.00	17.00	21.00	15.00
Shoulder	16.00	16.00	19.00	14.00
Rib	16.00	16.00	20.00	15.00

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

Conclusions

The consumers interviewed expressed a slight preference for the rib cut, which, according to the cut proposed by Calheiros and Neves (1968), includes the loin, chop, front chop, rib flap, and neck. The leg, which is also part of the saddle, did not receive any special preference compared to the shoulder.

The value that consumers place on the three butchers' pieces under analysis presents similar values, which probably denotes the habit of valuing the whole goatling carcass.

So, it is recommended that the goatling producers association follow this market strategy that involves selling goatling meat by the piece in order to reach more sophisticated consumers, that is, with more educational qualifications and higher net monthly income.

Acknowledgment

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