

Identification and selection of descriptors for establishing a sensory profile for "Requeijão"

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Abstract

This poster describes the steps taken for the identification and selection of descriptive terms for establishing a sensory profile for "requeijão" (curd cheese) in Portuguese. The developed profile will be used to create an assessment grid for the sensory evaluation of a traditional curd cheese produced in centre region of Portugal: "Requeijão Serra da Estrela". The methodology described in ISO 11035:1994(E) was closely followed in the establishment of the sensory profile. For the identification of descriptive terms a mixture of "requeijão" bought directly from local traditional producers and in supermarkets (industrial brands) was used. The panel was comprised of around 20 individuals, with diversified experience on descriptive sensory analysis. Terms were identified and selected for the evaluation of external and internal aspect, flavour, texture and after-taste. In a first iteration a total of 55 terms was obtained.

Material and Methods

- All the evaluations were performed in the sensory laboratory located at Escola Superior Agrária de Coimbra (ESAC). This laboratory is built and equipped according to Portuguese standard NP 4258:1993, and has three main sections:
 - A test kitchen for sample storage and preparation.
 - A test room equipped with 5 booths (Fig. 1)
 - A meeting room for training and group work (Fig. 1)
- Panel members were selected among ESAC personnel with previous experience on descriptive evaluation of traditional Portuguese Cheeses.
- The panel screening was based on the results of a battery of sensory tests (taste and odour, identification, triangular tests, ranking tests, use of scales and descriptive ability). Panel members were also ranked according to their punctuality, interest and performance (NP ISO 8586-1:2001, Meilgaard *et al.*, 1991).
- For the present study and after all the selection procedures a panel of 23 members (13 males; 10 females) was used.
- For establishing the sensory profile the methodology described in ISO 11035:1994(E) was closely followed: (1) Identification of the largest possible number of descriptive terms and preliminary sorting of descriptors; (2) First reduction in the number of descriptors (quantitative); (3) Second reduction (statistical) in the number of descriptors using Principal Component Analysis and hierarchical classification.
- The Requeijão used in the present study was bought directly from producers in the Serra da Estrela area and in local shops and supermarkets.
- Fig 3 and Fig 4 present two questionnaires used in the present study.



Figure 1 – Test room - Booths and meeting/open panel room

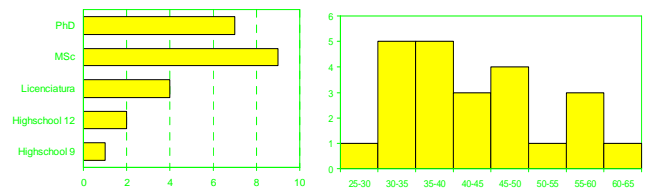


Figure 2 – Panel characterization. Educational level (left) and age distribution (right)

Results

- In the first step of the identification of descriptors for Requeijão a total of 582 terms was obtained after eliminating all the hedonic, quantitative and irrelevant terms.
- Due to the large amount of terms obtained, only the ones used for more than one Requeijão and proposed by more than one panel member were considered. Gender and plural variations were also discarded. After this preliminary screening a total of 249 descriptors was considered for the next phases (Table 1).
- After quantitative and statistical reduction (Figs. 3 and 4) only 55 terms were kept. This number was slightly changed after consulting panel members.
- Table 2 shows the descriptors selected for Paste.

Figure 3 – Evaluation sheet used for initial descriptor identification

Figure 4 – Evaluation sheet used for gathering data for quantitative and statistical reduction

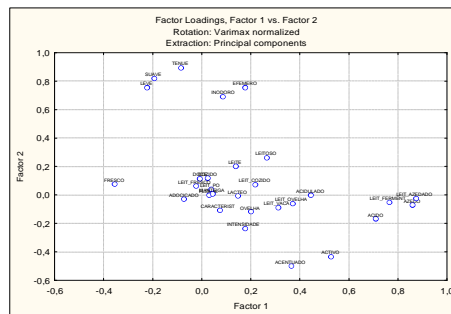


Figure 5 – Principal component analysis for Taste. Factor 1 represents "freshness/sourness". Factor 2 represents "intensity".

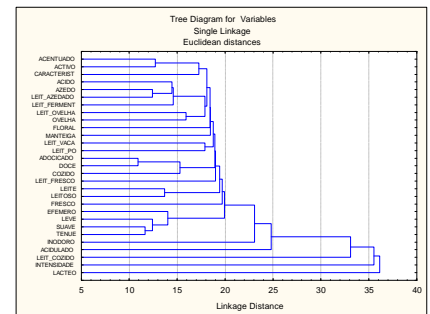


Figure 6 – Same data used in Fig. 5 (Taste) analysed using cluster analysis.

Table 1 – Number of descriptors for "Requeijão" obtained in the identification and after reduction phases

	Initial	1st screen	Statistic Reduction
Exterior	169	68	13
Paste	128	60	9
Texture	68	34	8
Taste	68	26	10
Smell	77	29	7
After taste	72	32	8
TOTAL	582	249	55

Table 2 – Descriptors for "Paste" after statistic reduction

#	Descriptor Portuguese	Descriptor English
1	Consistência	Consistency
2	Areada	"Sandy"
3	Humidade	Humidity
4	Cor amarela	Yellow
5	Olhos	"holes"
6	Cor Branco	White
7	Cor Marfim	Ivory
8	Regularidade da Cor	Colour regularity
9	Fissuras	Fissures

Future Work

- Choice of reference products and substances
- Training the panel in the reduced descriptive list
- Validation of the obtained list
- Establishment of a sensory profile for "Requeijão Serra da Estrela"
- Development of a sensory grid for the evaluation of "Requeijão Serra da Estrela"

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