

RESEARCH CONCERNING ESTIMATION OF CHOCOLATE QUALITY WITH METHODS OF SENSORIAL ANALYSES

PIRVULESCU LUMINITA¹, SÎRBULESCU CLAUDIA¹, BORDEAN DESPINA MARIA², IANCU T.¹, MERCE IULIANA¹, COJOCARIU A.³

¹*Banat's University of Agriculture Sciences and Veterinary Medicine Timisoara, Faculty of Agricultural Management:*

luminita_pirvulescu@usab-tm.ro, claudiasirbulescu@usab-tm.ro, tiberiuiancu@usab-tm.ro, iulianamerce@yahoo.com

²*Banat's University of Agriculture Sciences and Veterinary Medicine Timisoara, Faculty of Technology Agricultural Products: despina.bordean@gmail.com*

³*Tibiscus University Timisoara*

Abstract: *Foods have specific sensory properties and different in number and intensity, which is for consumers, one of the important criteria in the purchasing decisions. This work carry out a study on the sensory quality of an assortment of chocolate, using for this purpose the weighted method, method specifies the sensory analysis.*

Key words: *quality, sensory analysis, chocolate.*

INTRODUCTION

Characteristic of the food industry is the fact that it uses a variety of methods to control the quality of the products, due to the variety of raw materials, auxiliary materials, finished products and technological processes. In human behavior, sensory qualities, such as taste, smell, colour, consistency have a feature, which determines the affective way of eating. They are the first contact of the consumer product and determine his decision to buy.

Objectives and methods of evaluation of sensory properties of food products are required in the first instance to: consumer requirements and the introduction of new food technologies that lead to the achievement of high-quality food, but which must be evaluated in terms of sensory quality. As a consequence, sensory quality is part of the overall quality of the food.

The research of the last decades, have resulted in the collection of a large amount of data on the mode of application of sensory analysis to quality control and assessment of food goods. Currently, interest in the problems of "senzoricii" continue to maintain at a high level, not at all incidentally because the sensory properties of food goods are constantly consuming public attention that reacts quickly to all of the transformations occurring in certain products and in particular those related to sensory characteristics.

The complexity of the food composition and diversity of quality characteristics that should be considered in defining quality, determine appropriate methods of analysis. The senses sensory analysis to quantitative and registration at rectifying cerebral interpretation and their comparison with other similar impressions. This physiological process can be rendered quite objective and reproducible in the present state of sensory testing methods, provided that the feeling of a sense of the recorded sample will not be influenced and changed by another, caused by a simultaneous request.

MATERIAL AND METHODS

Sensory analysis of food means the examination done by using the organs of sense (sight, smell, taste, touch) as a result of the monitoring of the actual capacity for assessing the accuracy of reasoning and analyst, followed by an assessment of sensory impressions recorded and the processing of data obtained through the statistics.

This paper analyzes a range of chocolate with added (peanuts), using the method applied to score a number of 4 subjects (consumers).

For the chosen study Heidi chocolate and Primola, assortment of chocolate with nuts. Sensory characteristics representative of analysis are: external appearance and in section (at a temperature of $20 \pm 2^\circ\text{C}$), respectively, form the consistency (at a temperature of $20 \pm 2^\circ\text{C}$), color, aroma, taste. In table 1 are shown the scoring scale used for sensory characteristics selected scores.

Table 1

Evaluation of sensory quality score of chocolate with hazelnuts

Sensorial feature	Scoring scale	Description of the characteristics of the product concerned	Points awarded
In the appearance section ($20 \pm 2^\circ\text{C}$) and form	0...4	Regular shape, smooth, shiny surface, without spots and cracks; drawings.	4
		The surface is lightly frosted, shows small cracks; small craters present form and design.	2
		Pieces of peanuts are not evenly distributed; presents drawings outlined weak; matte surface.	0
Consistency ($20 \pm 2^\circ\text{C}$)	0...4	Loud, onctuoasa, fine.	4
		Less fine.	2
		Too hard, coarse.	0
Color	0...4	Uneven color, specific additions used (nuts)	4
		Too weak/strong	2
		Shows stains, different shades	0
Flavor	0...4	Well defined, enjoyable, in line with the addition of used.	4
		Specifies, but weak/strong expressed	2
		The missing flavor, unwanted or foreign	0
Taste	0...4	Well defined, pleasant, aroma cuisine /used addition	4
		Taste less clear	2
		Uncharacteristic, sour/tangy, unwanted, bad taste	0

RESULTS AND DISCUSSION

Description based on personal observations of sensory characteristics for each of the two brands of chocolates is presented in table 2.

Sensory analysis is done by each of the four consumers polled and the results are listed in a separate sheet of sensory analysis (Figure 1).

Table 2
Sensory description of the characteristics of the two brands of chocolate

Sensorial feature	Description of sensory characteristics	
	<i>Heidi (with peanuts)</i>	<i>Primola (with peanuts)</i>
Packaging Design	Glossy paper, waterproof, with image presentation mauve company (beef mauve) and the brand and design chosen assortment (peanuts)	Glossy paper, waterproof, with the red mark and assort design chosen (peanuts)
In the appearance section ($20 \pm 2 \text{ }^\circ \text{C}$) and form	Regular shape, smooth surface glossy, shows sharp drawings (brand name), homogeneous mass, dull in the rift, multilayered, nutty dishes evenly distributed	Regular shape, smooth surface glossy, sharp drawings (brand name), table mat homogeneous in the split, multilayered, bits of nuts evenly distributed
Consistența ($20 \pm 2 \text{ }^\circ \text{C}$)	Hard, breakable, delicate	Hard, onctuoasa, fine
Color	Uneven color, specific additions used (nuts)	Uneven color, specific additions used (nuts)
Smell	Very good, strong, well defined, without foreign accents	Very good, strong, well defined, without foreign accents
Taste	Characteristically, well, peanuts, pleasant flavor, without foreign accents	Characteristically, well, peanuts, pleasant flavor, without foreign accents

Individual card of sensory test
Name of the product:
Name evaluator:
Date:

Sensorial feature	The individual score given	Observations
External appearance and in section		
Consistency		
Color		
Smell		
Taste		

Figure 1 Model for individual card of sensory test

In the end, the total average score obtained for each product review by filling out the centralized records of sensory analysis.

The use of sensory analysis sheet

Product name: Heidi chocolate

Sensorial feature	Individual score				Total average score
	<i>E1</i>	<i>E2</i>	<i>E3</i>	<i>E4</i>	
External appearance and in section	4	4	4	2	3,5
Consistency	4	4	4	4	4
Color	4	4	4	4	4
Smell	4	4	4	4	4
Taste	4	4	4	4	4
Total	20	20	20	18	19,5

The use of sensory analysis sheet

Product name: Primola chocolate

Sensorial feature	Punctaj individual				Total average score
	<i>E1</i>	<i>E2</i>	<i>E3</i>	<i>E4</i>	
External appearance and in section	2	2	4	4	3,0
Consistency	4	2	2	0	2,0
Color	4	2	4	4	3,5
Smell	2	4	2	2	2,5
Taste	2	4	2	2	2,5
Total	14	14	14	12	13,5

CONCLUSIONS

Application of score method in order to estimate the level of quality for the food product, Heidi with peanuts has obtained a total of 19.5 points, and the nuts got Primola scoring an average of 13.5 points. So Heidi Product is part of the Premium class.

Heidi Product obtaining a near maximum score (20 points) from all four subjects, does not require changes in the quality or properties.

Primola product obtained averaging all four subjects scoring lower than maximum therefore needs improvement in all five aspects studied in different proportions. Thus, the proposed improvements in product consistency by bringing filling in the standard, that it must be more consistent in pieces peanut finer. Regarding smell that must be seized following deviations Far moderating flavors so as to create a harmony between specific smell of chocolate flavor combined with peanut filling. And in terms of taste: you have to focus on slowing filling taste and pleasant taste after getting a combination of two flavors (chocolate and nuts).

BIBLIOGRAPHY

1. BANU, C, Manualul inginerului de industrie alimentară, vol.II, Editura Tehnică, București, 1999.
2. BANU C. coordonator, Tratat de inginerie alimentară, Editura Agir, București, 2007.
3. DIACONESCU, I., PĂUNESCU, CARMEN, Analiza senzorială în societățile comerciale, Ed. Uranus, București, 2003.
4. DIMA, D., PAMFILIE RODICA, PROCOPIE ROXANA, Mărfurile alimentare în comerțul internațional, Editura Economică, București, 2001.