QUALITY RATING DIFFERENT KINDS OF COOKIES BY SENSORY ANALYSIS

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Summary: Sensory qualities of foods are based on the sensory link between food and human body, formed by a system of informational connection which is being made by means of senses the people are endowed with, depending on their personality as well. Sensory sensitivity is a parameter which characterizes one's capacity of reacting to different analyzers; it is inversely proportioned to the sensory threshold (absolute or differential); the more a person perceives weaker concentrations of some substances (their gustative, olfactory threshold is lower), the higher their gustative sensitivity is. The simple comprehension of this notion, namely the analysis of food by means of senses, but with no control of real appreciating capacity of sense organs and no analyst's accuracy reasoning, always leads to uncertain results, increase in subjectivity degree of sensory examination, consequently to results that often might be contested. Consumers have become more and more concerned with nutrition, reason for which dietetically biscuits are a real challenge for the consuming market.

Keywords: quality, food products, cookies

Introduction

At this moment the interest in the problems of sensory keeps being at a high level; this is not something casual as the sensory properties of food goods are permanently in the attention of wide consuming opinion which reacts sensitively and promptly to all the basic changes occurring in some products and especially to those related to sensory characteristics (Carr T., 2009).

Sensory analysis is widely applied in industry and trade, with practical effect in the analysis and assessment of food products' quality. This is a certainty if we have in view that the physico-chemical and microbiological analyses are not enough since they do not emphasize the sensory value of foods (Apostu S., Nahiu A., 2008).

The complexity of composition of food products and diversity of qualitative characteristics to be focused on in view of quality determination lead to the use of some adequate analyzing methods which comply with the technical progress and quality requirements (Banu C., 2007).In Italian *biscotti* means,, something baked twice". The word *biscotto* derives from the terms *bis* (twice) and *cotto* (baked).

Other countries have their own version of biscuits, for example, in the Netherlands they are called *rusk*, in France *biscotte*, and in Germany *zwieback*. One of the earliest proofs dates back from the second century in Rome (Iosif., 2002).

In America, a biscuit is described as being a thin, sweet and usually of small dimension cake.

Every country has its own word for this kind of "cake". These sweets in England and Australia are called biscuits, in Spain *galletas*, Germans call them *keks/kels*, and in Italy there are more names to identify different varieties of biscuits such as *amaretti* and *biscotti* (Dan V., 2001).

According to the history of gastronomy, the first proof recorded of biscuits states that initially a small amount of cake dough was baked to check the temperature of the ovenDue to the big variety of raw and auxiliary materials used, different proportions of these ones and technological methods used, the range of biscuit assortments is very wide (Dan V., 2001).

Experimentals

The sensory analysis was made on the following types of sugary biscuits:

- Sample no. 1 - Honey biscuits (Romdil, Tess);
- Sample no.2, - Oreo biscuits;
- Sample no.3 - Cacao cream and rum flavor biscuits (Alexia, Germino);
- Sample no.4 - Cacao cream biscuits (Madison);
- Sample no.5 - Vanilla cream biscuits (Madison);
- Sample no.6 - Cranberries biscuits (Poieni);
- Sample no.7 - Chocolate biscuits (Belvita).

Methods used in sensory analysis:

Descriptive analysis was used to assess the intensity of each attribute. Therefore, tasters should be trained to use properly the intensity scale and the samples during the assessment session.

It is required to be careful in the standardization, sampling and training of the sensory panel. Samples must be coded by three aleatory numbers and presented to the staff trained and chosen for doing so.

The most frequently used descriptive techniques are: taste profile, texture by profile, quantitative/descriptive analysis (QDA) and tempo-intensity, the spectrum of descriptive techniques and free profile were used as well.

Procedure:

Tests using scales show the type or intensity of a sensory reaction. Scales fall into four classes: nominal, ordinal, interval and proportion. The nominal scale identifies only classes or categories, but there is no quantitative relationship between these ones, as it is, for example, the classifying scale of coffee. The ordinal scale distinguishes categories as an ordered series, but without expressing the difference between dimensions.

The interval scale implies equal distances (interval) between points (categories) of the scale and arbitrary origin.

These scales (table 1) are set at different points, usually at extremities and sometimes in the middle of the scale with terms showing the reaction extent. It usually varies between 5 and 15 non-structured points (5-15) cm on balance.

Table 1 Description of the items of scale value

Description of scale values	Value appreciation
You like it extremely a lot	9
You like it very much	8
You like it moderately	7
You like it little	6

Description of scale values	Value appreciation
You do not like it nor dislike	5
You dislike it little	4
You dislike it moderately	3
You dislike it a lot	2
You dislike it extremely a lot	1

Results and discussion

After having made the sensory analysis for each of product type, the following graphs were obtained results from table 1.

Table 2 Results of sensory analyses

Taster	Sample	Sensorial characteristics						Average product	Average overall
		Appearance	Colour	Taste	Smell	Flavour	Consistency		
D1	P1	7	7	6	7	9	7	7,1	**7,77**
	P2	9	9	9	9	9	9	9	
	P3	9	9	9	9	9	9	9	
	P4	7	7	7	4	7	6	6,3	
	P5	9	9	9	9	9	9	9	
	P6	7	7	7	7	7	7	7	
	P7	7	7	7	7	7	7	7	
D2	P1	8	9	7	8	8	8	8	8,4
	P2	9	8	8	8	8	8	8,1	
	P3	9	9	9	8	9	9	8,8	
	P4	9	9	9	9	9	9	9	
	P5	9	8	9	9	9	9	8,8	
	P6	9	9	7	9	9	9	8,6	
	P7	8	8	7	7	7	8	7,5	
D3	P1	8	8	7	7	8	8	7,6	**7,7**
	P2	9	8	7	8	8	7	7,8	
	P3	9	8	8	7	8	8	8	
	P4	8	8	8	7	8	8	7,8	
	P5	8	8	7	7	8	7	7,5	
	P6	8	9	9	7	8	7	8	
	P7	8	8	7	7	8	7	7,5	
D4	P1	9	9	9	7	9	9	8,6	**7,8**
	P2	8	4	7	8	8	8	7,1	
	P3	8	9	6	8	8	8	7,8	
	P4	4	6	5	6	7	8	6	
	P5	6	6	6	9	9	9	7,5	
	P6	8	9	9	9	9	8	8,6	
	P7	9	9	9	9	9	9	9	

As it could be seen, the product no. 1, namely honey biscuits have registered the highest value for color.

The product no. 2, Oreo biscuits, and one can notice that the situation is pretty balanced, the general aspect getting the highest score.
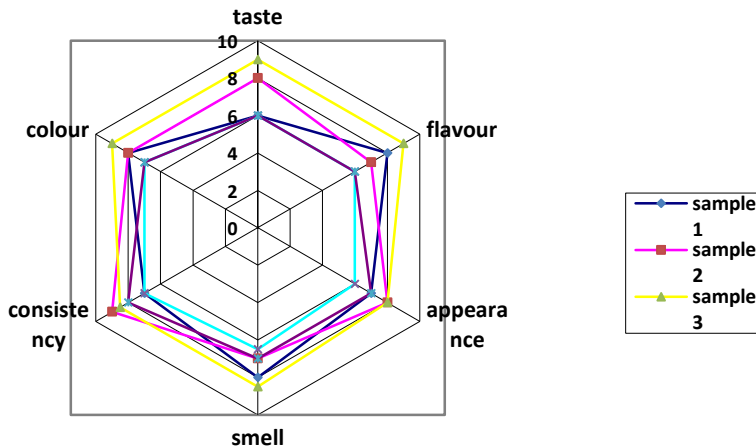
The product no.3 one can notice that cacao cream and rum flavor biscuits registered the highest score for color.

It is obvious that cacao biscuits have registered a pretty high percentage for texture, but a pretty low one for taste. Vanilla cream biscuits have registered the highest score for scent category, but less for the other attributes.

Results show that cranberries biscuits are highly appreciated from the point of view of color and flavor as well.

All the result shows that the general aspect and color are at a pretty high level as compared with the other types of products, so chocolate biscuits are pretty good according to the results obtained.

After having made the sensory analysis of these seven different products, the following general graph was achieved:

Fig. 1 Sensory profile of samples of sugary biscuit

This graph emphasizes that the Sample no. 2, Oreo biscuits, reach the highest standards from all points of view, such as general aspect, color, taste, scent, flavor and texture as well. For example, most tasters considered Oreo biscuits better than any other type of biscuits: their cream, good looking aspect, good consistency, specific persisting scent and taste.

Sample no.4 was ranked on the last position as can be seen from the graph, registering a very low average as compared to the other types of biscuits.

Conclusions

Biscuits are being consumed by almost every social class. The reasons for which they are so widely popular are the following: easily to be eaten, are being commercialized at affordable prices, high nutritional quality, availability of different flavors and long shelf-life. Having in view that the high content in fats of biscuits is considered not so benefic to health; lately consumers have showed the tendency of purchasing few-calorie and healthy products.

Consumed in the morning at breakfast, together with a cup of tea, as dessert or a simple snack between meals, biscuits are part of the daily food. At present there is a wide variety of biscuits, not only in terms of assortments but the product weight.

The development of „cookies" segment has led to an increase in the number of consumers of other categories of sweets such as wafers, mini-cookies and croissants.

Another opportunity is the segment of healthy biscuits. Consumers have become more and more concerned with nutrition, reason for which dietetical biscuits have gained their position on the consuming market as a distinct category, being really one of its challenges.

Irrespective of the way they are purchased as a dessert or a full snack between meals, sugary biscuits may provide consumers with a high energy intake.

Sugary biscuits have a very high content in sugar which means they give us an energy bonus even if it is for a short period of time.

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