

THE EVALUATION OF MUSLI QUALITY USING QUALIMETRY METHODS

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Abstract

This paper work follows two objectives: the application of qualimetry methods for verification and estimation of quality; comparative study of three types Musli from Timisoara's supermarkets. The estimation and measurements of quality of a foodstuff means: verification of packing and presentation manner; verification of organoleptic properties; verification of physical and-chemical properties; microbiologic examination. In order to appreciate the quality were gathered samples of Musli from three different producers. The producers were numbered with 1, 2 and 3. Two methods of qualimetry were used in this paper: the point's method and the integral index of quality.

Keywords: *quality, qualimetry, Musli*

Introduction

This paper work follows two objectives:

- the application of qualimetry methods for verification and estimation of quality;
- comparative study of three types Musli from Timisoara' s supermarkets.

The estimation and measurements of quality of a foodstuff means: verification of packing and presentation manner; verification of organoleptic properties; verification of physico-chemical properties; microbiologic examination.

It is considered that in case of foodstuff the proportion of psycho sensorial characteristics in appreciation of quality is between 50 and

90% function of products nature: fresh fruits and vegetables – 90; panification products – 80; confectioner’s products – 70; alcoholic drinks – 60; preserved meet and sausages 50; dairy products and fish have a bated proportion, etc. (Segal, 1982).

In order to appreciate the quality were gathered samples of Musli from three different producers. The producers were numbered with 1, 2 and 3.

The sensorial appreciation of samples was made in laboratory of discipline Science of commodities of foodstuff and the physico-chemical examination in the Nutrition laboratory. Subsequent, for estimation and quality measurements were used the score method (Segal, 1982; Banu, 2002) and total index of quality (Ştef, 2006).

Experimental

Two methods of qualimetry were used in this paper: the points’ method and the integral index of quality.

The score method is used specially for quantitative measurements of sensorial properties of foodstuff. In the first variant the costumers give a score from 1 to 100, for each product, in the preferences order. The score was given after a general appreciation of presentation manner, aspect, odour and taste.

In the second variant for each parameter of product (presentation manner, aspect, odour, taste) were established a qualificative – very good, good, satisfactory and bad. For each Musli type were made gustation cards (Table1), were obtained 47 cards of sensorial appreciation.

Table 1. Gustation card

Sample identifier	Quality indices			
	Presentation manner	Aspect	Taste	Odour
1				
2				
3				

Signature

To obtain the total indices, are calculated simple indices, for each parameter with one of following relations:

$$I_a = \frac{X_a}{X_b} \quad \text{or} \quad I_a = \frac{X_b}{X_a}$$

Where:

I_a – value of analytical indices of quality

X_a – characteristic range for the analysed product

X_b - characteristic range for base product (base of comparison).

The use of one or another relation is function of nature characteristic quality that is analysed. If is calculated the analytical index for nutritional substances is used the first relation; if are calculated the impurities from the product, the analytical index of quality will by calculated with the second relation.

A very important step in calculation of total index of quality consists in establishing the gravity given to each characteristic, function of their importance in the process of quality settlement. The participation was established as it follows: presentation manner - 0.15; aspect - 0.15; odour -0.15; taste - 0.15; proteins - 0.15; carbohydrates – 0.15 and fats - 0.10.

The analytical indices are balanced and by summing the simple balanced indices are obtained the total index of product quality.

Results and Discussions

After calculating the averages for the three variants of Musli resulted:

- for points method the products order was – type 1 with 2600 total points and $X = 68.4$ points, type 2 with 2585 total points and $X = 68.0$ points, type 3 with 2045 total points and $X = 53.8$ points.

- after application of first variant is noticed a proximity between the first two types of Musli, as results from figure 1.

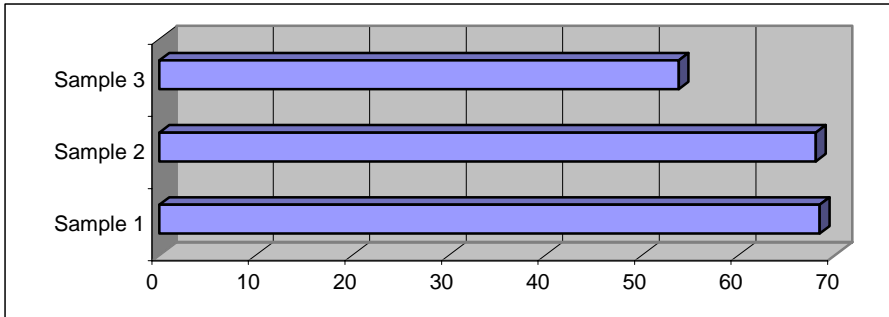


Fig. 1. The products order calculated with points method

The total index of quality is calculated using both sensorial appreciation of products and the results of laboratory determinations.

For organoleptic properties were given qualificatives, which are transformed in numbers: 1 - very good; 0.67 - good; 0.33 - satisfactory and 0.1 - bad. Both results for sensorial estimation and results of laboratory determinations are shown in table 2.

Table 2. Sensorial estimation and results of laboratory determinations

	Presentation manner	Aspect	Taste	Odour	Proteins	Carbohydrates	Fat
S 1	0.657	0.675	0.546	0.498	9.7	63.2	4.7
S 2	0.979	0.921	0.880	0.937	8.3	67.5	12.9
S 3	0.328	0.347	0.434	0.328	7.8	70.9	6.7

The analytical indices of quality were calculated using their relations showed before. The sample 1 was considered base of comparison. The results are presented in table 3.

Table 3. The analytical indices of quality

	Presentation manner	Aspect	Taste	Odour	Proteins	Carbohydrates	Fat
S 1	1	1	1	1	1	1	1
S 2	1.49	1.36	1.61	1.88	0.85	1.06	2.74
S 3	0.49	0.51	0.79	0.65	0.81	1.12	1.42

Then total index of product quality for each sample was calculated and the following values were obtained: 1 for the sample 1.00; 1.51 for the sample 2 and 0.78 for the sample 3. After application of the second variant are noticed differences among the three types of Musli, as results from figure 2.

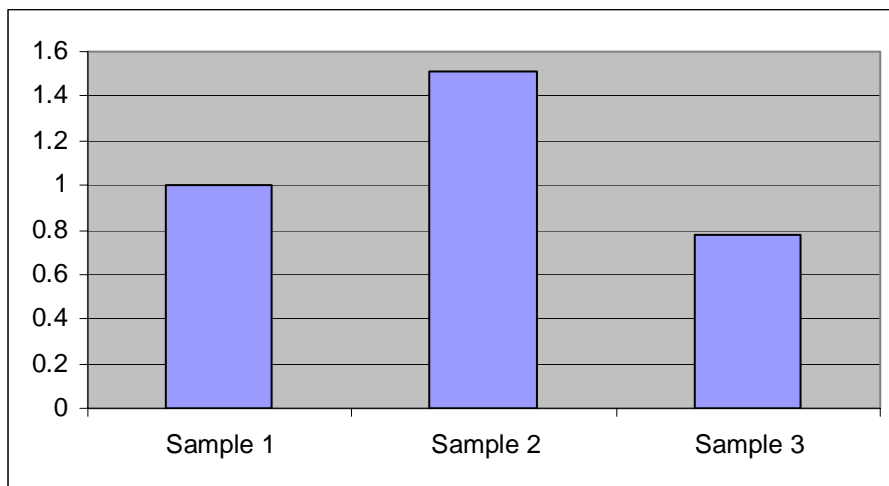


Fig. 2. The total index of product quality after application of the second variant

Conclusions

The estimation of food products quality noticed semnificatives differences between the points' method and the integral index of quality. The best type of Musli was represented by sample with number 2, which was followed by sample 1 and sample 3.

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