



ANALYSIS METHODS OF TASTING AS AN INSTRUMENT OF MARKETING DURING QUALITY FORMING OF NEW GRAIN PRODUCTS

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Abstract: *The questions on application of the analysis method of tasting as an instrument of marketing during quality forming of the new, food products with the improved consumers' qualities, have been considered in the article. When combining marketing methods of the consumers' estimation with a descriptive and profiling method of the tasting analysis, one can obtain an expected "ideal gustatory and aromatic image" of the new product and application of visualization of these images gives an opportunity of obvious and quick comparison of the main indices of the product. The bread on the basis of the whole grain of wheat was taken as an example and application of the analysis methods of tasting during creating of "an ideal image" of the products, has been considered. It was used during the working out of recipe composition of the new product later on.*

Keywords: *"an ideal image" of the products, bread on the basis of a whole grain, descriptors, marketing investigations, tasting analysis*

1. Introduction

One of the most important tasks concerning the improvement of the nutrition structure of the population is increase of consumer goods products with the increased food and biological value. The modern nutrition must satisfy not only physiological demands of a man's organism in energy, nutritious and biologically active substances, but also carry out prophylactic functions and must certainly be absolutely safe. We can say that one of the main principles of the modern development of food industry is working out of the new products, taking into account the consumers' interests with the functional directions which will contribute to improving and preserving of the population's health.

During creation of a new product, a researcher is quite often supported by the subjective estimation that sometimes leads to putting goods on the market which do not meet the consumers' requirements. That's why, for successful development of a new product, it is necessary to determine as soon as possible what a new product should give to a consumer, what advantages it has got, what desired properties it should have, application, its expiry date, its importance. The conception of a new product should be worked out together with a consumer, imagining the product in such a way, in which a consumer would like to see it [1]. It's necessary that this product will be in demand among the consumers, that it will have profitable competitive advantages (using the terms of the market researcher –

“a unique trade offer”). So, it’s necessary to involve in the development of the new products not only engineers – technologists but also specialists of marketing. Only active joint work gives an opportunity to create a strong competitive brand [2, 3].

An indispensable part of the work of marketing experts is market analysis and seeing to the range of the main competitors, determining of the market segment and positioning of a new product, determining of the prime cost, an optimal retail price and product profitability, methods of introduction into the market and methods of merchandising. Marketing specialists must also give primary recommendations about the taste of the product, its size, package design and take an active part in composing of the verbal “image” of the product [3].

2. Material and methods

We have developed a model of forming of the consumers’ characteristics of a new food product with the improved consumers’ characteristics [4], which foresees a complex approach to the development of a new competitive product. On the one hand, this model foresees a complex of measures concerning forming of culture of consuming products with the aim of developing of a consumer himself in the questions of nutrition and healthy way of life. On the other hand, this model foresees a complex of steps, which should be done by a manufacturer himself concerning development of a new product with the improved consumers’ characteristics which will meet the requirements and wishes of the potential consumers.

We will consider in detail the process of forming the quality of a new product with the improved consumers’ characteristics. According to the worked – out model it should be started with studying of prevalence and depth of deficit of the food

and biologically active substances (Fig. 1). At this stage it’s necessary to carry out the analysis of actual nourishment of the population, reveal its disadvantages and causes of origin of some alimentary – dependent diseases, carry out the research with the aim of determining of the indispensable nutritive substances (vitamins, macro-and microelements and so on), the deficit of which is the deepest in the particular region and embraces the most part of the population. It’s necessary to take into account influence of the environmental factors which are characteristic for this particular region. The obtained results are bases for choice of the nutritive and biologically active substances, which are additionally introduced in the composition of the product, and their amount as well.

Simultaneously, a marketing specialist carries out the analysis of the market of the existing analogues of goods, raw materials, materials and determines the possibilities of the enterprise concerning the production of the developed products with the aim of working out the demands to the products meeting of which will contribute to its realization.

Creation of a high – quality product is impossible without carrying out the marketing research of the consumers, both existing and potential, which includes investigation of the economic, social, geographic, demographic and other characteristics of the consumers and revealing of their motivations and demands in the process of buying a product. Therefore, the second stage of the product development includes carrying out marketing research of the consumers’ motivations and preferences. In the process of marketing research, the consumers’ preferences are determined; first of all they are gustatory preferences of the potential consumers, possible amounts of a new product consumption, the main and additional sources of the indispensable

nutritive substances introduction, which influence choice of the amount of the enriching additive introduction. On the basis of the revealed consumers' preferences the technical task for the industry is formed, that is the consumers' conception of the product is formed. Simultaneously, tasting of the products – analogues is carried out; their weak and strong points are revealed and these points concern social, esthetic, ergonomic, logistical and other peculiarities of the given products.

Carrying out of the given measures is aimed at the development of such a product, as a result, which will be competitive on the market, that is due to its consumers' characteristics it will satisfy definite contingent of the consumers, not being inferior and even being superior to the products of the analogous purpose, which are produced by the competitive enterprises.

If a researcher is guided by the market demands, then the significant contribution into the product development is made by the consumers as well, who become its researchers in the reality as well. We can say, that the most rational way of forming of the consumers' market of the food products with the improved consumers' characteristics, according to the developed by us model [4], is the technology, due to which, the samples demanded by particular social groups of population or even by every separate consumer, are introduced into the market. Such system suggests revealing of the consumers' preferences of the population by carrying out the marketing research, forming of the technical task for industry on the basis of the revealed preferences, manufacturing of the production and carrying out its address distribution. Registration of the individual demands of the potential consumers can be carried out on the basis of tasting analysis as well. It's well known that tasting analysis allows to solve different tasks

during the whole life cycle of the goods: from forming its quality to introducing the product to the consumers and tracing the quality of the product at each stage of logistics. We will study in detail the application of the tasting method of the analysis during forming the quality of a new grain product, in particular bread on the basis of wheat whole grain.

According to a lot of investigations the gustatory qualities of the product occupy the second place after its price in forming a decision whether to buy it or not [2]. Modern investigations in the theory and practice of the organoleptic analysis allow to apply qualitatively new methods in developing of the new food products. These particular methods include carrying out comparative tastings of the competitive products, forming of the "ideal image" or the image of the new product, creating the panel of descriptors of the product being developed on the grounds of consumers' expectations, working out the variants of the recipes, carrying out expert tastings (Fig. 1). Created during the working out, the individual signs of a food product (descriptor) allow to change gustatory and aromatic characteristics of the product depending on their qualitative value. So, the qualitative individual indices, relating to gustatory, olfactory or tactile stimuli, can be expressed quantitatively. In the opinion of some authors [3, 5], this methodology in addition to added practical skills, is necessary in developing of the new food products, including functional ones, socially significant.

3. Results and discussion

The great popularity in developing of the new food products has lately acquired an organoleptic method of forming "an ideal image" of the developed product [3]. In connection with it, in developing of the new bread on the basis of wheat whole grain with introduction of the additives of

plant origin (root – crops of celery, parsley and parsnip), the tasting methods were used, in particular the method, based on creating of the product “ideal image”.

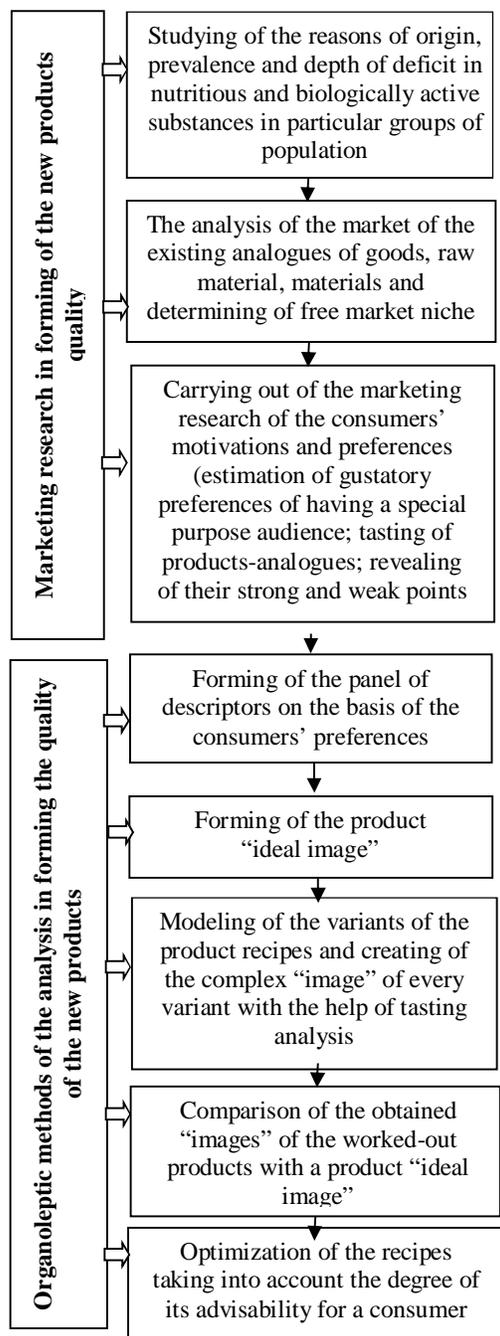


Figure 1. The complex measures on forming the quality of the new products with the improved consumers' characteristics

The aim of creating “an ideal image” is getting a visual complex characteristic of the developed product, which allows to express advantages of these or those characteristics quantitatively [3].

Combining the marketing methods of the consumers' value with a descriptive – profile method of the tasting analysis, we can get the expected “ideal gustatory-aromatic image” of a new product, and application of visualization of the given images gives an opportunity of visual and quick comparison of the main indices of the product.

A complex “ideal image” of a product can be formed from some “components” – a gustatory profile, an aromatic profile, an emotional (hedonistic) profile [3]. For forming an organoleptic “ideal image” of the new bread on the basis of the wheat whole grain, its gustatory – aromatic profile, it is necessary, first of all, to work out panel of descriptors, that is the main signs of the product, forming its perception. For this purpose, opinion-polls were carried out in focus – groups. During the opinion-polls, the respondents were offered to described verbally those characteristics of the bread, which they consider to be optimal for the developed product and which they would like to see in the new product. As not all respondents can correctly describe their gustatory sensations they were offered already formed panels of descriptors, from which a respondent had to choose 10 ones, at most, meeting his requirements to an “ideal product”. Then, on the basis of the filled out tasting questionnaires, those signs were chosen, which repeated as often as possible with their division into the following groups: gustatory, aromatic, emotional and so on. So, the most significant signs for this, having a special purpose, group, characterizing its understanding of the “ideal product”, were chosen.

On the second stage, the coefficients of descriptors importance of the bread new types, were determined. For this purpose the respondents had to rank, by the degree of importance, the product descriptive characteristics and without assistance to determine a bearing interest share of importance for them, the sum of which must be equal to 100%. On the basis of these data the coefficients of importance were calculated (Table 1).

The coefficients of importance were calculated, taking into account that their sum should be equal to 20, so, that ratable five-mark scales can easily be transformed into 100-markscales and total marks can be expressed in percentage.

Table 1.
Coefficients of descriptors significance (C_{si})

Taste	C_{si}	Aroma	C_{si}	Emotional perception	C_{si}
Harmonious	5	Baked bread	5	Usefulness	5
Saturated	4	Saturated	3	Rate of satisfying one's hunger	4
Sweet	2	Intensive	4	Quality of satisfying one's hunger	3
Bread-like	4	Grain	3	Restoring effect	3
Grain	2	Caramel	2	Prophylactic effect	5
Spicy	3	Spicy	3		
Sum total	20		20		20

Then, using the calculation coefficients of importance of every descriptor, their grading was carried out and a complex panel of descriptors was composed (this is the most important condition of forming the product ideal image). On the basis of the coefficients of importance it is easy to create "an ideal image" of the product, in which every descriptor is significant. This is, so – called, ideal or expected by the consumer image of a product, reflecting its competitive advantages, an obtained

profile diagram is given in Fig. 2. As we can see from the diagram, first of all a consumer would like to see usefulness and its prophylactic orientation in the new product, then the bread should possess pleasant organoleptic indices, namely a pronounced aroma of the baked bread and harmonious, saturated taste.

After the panel of descriptors has been formed and an "ideal image" of a new product is clear, the work of engineers – technologists begins concerning development of the recipe composition of a new product. It is done by the variation choice of the initial components with application of the expert methods of the tasting analysis.

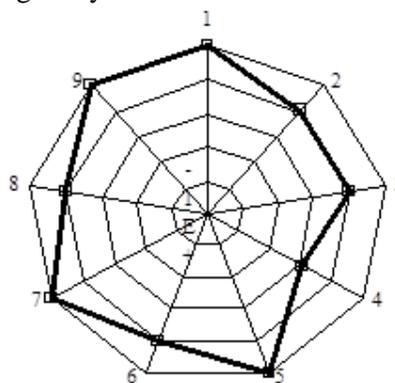


Figure 2. «Ideal image» of the bread on the basis of the wheat whole grain with adding root-crops:

- 1 – harmonious taste, 2 – saturated taste,
3 – bread-like taste, 4 – spicy taste,
5 – aroma of baked bread, 6 – intensive aroma,
7 – usefulness, 8 – rate of satisfying one's hunger,
9 – prophylactic effect

The final stage of the work is creating the image of the properly developed product, namely the new bread on the basis of the whole grain with introduction of root-crops and with the following comparison with an "ideal image" of the product. The organoleptic analysis was carried out by tasting. During tasting, every taster was offered tasting questionnaires, a panel of descriptors and made in the laboratory conditions 3 samples of bread on the basis of the wheat whole grain with adding

different percentage of root-crops: sample 1 – bread on the basis of the wheat whole grain with adding 7.5% root-crops; sample 2 – bread on the basis of the wheat whole grain with adding 10,0% root-crops; sample 3 – bread on the basis of the wheat whole grain with adding 12.5% root-crops. During tasting the descriptors were estimated, which were important for consumers and which were included in the complex “ideal image” of the product. By the results of the carried out tasting with the help of descriptive – profile method, the “images” or gustatory – aromatic profiles of the introduced variants of the production were composed and it was revealed that sample 2 corresponds to the “ideal image” most of all.

In Fig. 3 the profile diagram of comparison of the bread “ideal image” from the point of view of the consumers (dotted line) and “the image” of the sample of the new type of bread on the basis of the wheat whole grain with adding 10% root-crops (continuous line). As we can see, the profiles practically coincide, except the index of bread-like and spicy taste of bread, that can be easily corrected, slightly changing the recipe of the bread.

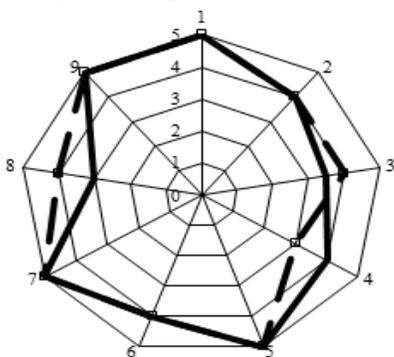


Figure 3. Comparison of the profiles of bread “ideal image” on the basis of the whole grain with adding of root-crops and an experimental sample:

- 1 – harmonious taste, 2 – saturated taste,
- 3 – bread-like taste, 4 – spicy taste,
- 5 – aroma of baked bread, 6 – intensive aroma,
- 7 – usefulness, 8 – rate of satisfying one’s hunger,
- 9 – prophylactic effect

4. Conclusion

On the basis of the given results in the laboratory conditions, the experimental samples of bread on the basis of the wheat whole grain with adding of root crops, were worked out and their complex merchandising estimation by studying the organoleptic indices of quality, food and biological value, structure peculiarities, indices of safety and medical and biological characteristics, was carried out [6]. As a result it was established, that the developed bread is characterized by high consumers’, namely improved organoleptic indices, increased content of cellulose, vitamins and mineral substances, which allows to create the balance of nutrients in the products, which is adequate to the demands of the prophylactic nutrition. And the most important thing is that the obtained product fully meets the requirements, which were raised by potential consumers during marketing research, and it, in its turn, rectifies about competitiveness of the new product. We can make a conclusion that such method is very visual and simple and it allows to see disadvantages of the products in the complex and reveal ways of achievement of the necessary organoleptic properties of the product.

Developing new products, manufacturers often underestimate methods of the tasting analysis, counting on the aggressive promotion. However, it is the professional application of sensory methods of estimation of gustatory advantages of the product that allows to significantly reduce the budget of marketing and technical research and to avoid mistakes.

5. References

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