

FUNCTIONAL FOOD – SUPPLY AND DEMAND IN A MODERN SOCIETY

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ABSTRACT: *Functional food represents a group of foodstuffs which satisfies not only basic, but also additional physiological needs, improves health and reduces the risk of disease. The subject of this paper is functional food from the aspect of supply and demand in hospitality facilities, as a modern trend in nutrition. The aim of the research is to provide answers to the following questions, which refer to the hospitality sector: Are hospitality workers familiar with characteristics of functional food? Do hospitality workers face demand of functional food? Is there an option of preparing functional food in restaurants where the respondents work? Are guests willing to pay extra for preparation of food which is beneficial to their health? The survey included respondents (n= 105) in restaurants in Novi Sad (AP Vojvodina, Serbia). Based on the conducted survey, we came to a conclusion that workers are acquainted with the term of functional food. Visitors of hospitality facilities (guests) often demand such food, and restaurants have an option of preparing food which is beneficial to health, but consumers are not completely prepared to compensate on food taste for health benefits.*

Keywords: *functional food, nutrition, hospitality, gastronomy*

INTRODUCTION

Food is an important social resource, with a significant historic and religious role, together with its basic nutritional, i.e., physiological values. It represents culture and customs, it offers opportunities for an exchange of experiences and social interactions, it provides pleasure (Long, 2004; Kivela, Crofts, 2006; Tikkanen, 2007; Smith, Xiao, 2008;

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Tešanović et al., 2017). However, it has a special significance in a modern society from the aspect of supply and demand in hospitality facilities specialized in food and beverages service (Tešanović, 2009; Škrinjar et al, 2010; Cvetković et al, 2016). Here, food declared as functional food for its components gains importance.

From a technical point of view, all foodstuffs are functional, because they satisfy basic human needs and have a nutritional value. However, an expression 'functional food' refers to foodstuffs which have an additional physiological benefits for a human organism and which surpass basic nutritional needs. Functional food does not only represent a classical dietary product which provides a basic nutritional function of supply with nutrients. It represents food which improves health and/or reduces the risk of disease. It is recognizable in the food market as a special category and it represents one of the most intense areas of innovations of food products in the world (Urala, Leahteenmeaki, 2004; Stanton et al., 2005; Verbeke, 2005; Cupara et al., 2007; Siró et al., 2008; Đurović et al., 2020).

There is more and more scientific evidence that, besides necessary nutritional components, there are many other food components which can have a positive effect on health (Bast et al., 2002). The interest in functional food has increased in the last decade, precisely because of increasing concern in health, changes in regulations on safety and benefits of food and scientific evidence which emphasize the relationship between food and health (Hasler, 2000). Serving staff are more and more often asked questions about functional food in their restaurant offer. Functional food is more and more sought after in the hospitality market because it is very important for improving the quality of life, balancing and maintaining the maximum of body functions, maintaining health and reducing the risk of disease (Milner, 2000; Cvetković et al., 2016). This is why the supply and demand of functional food in hospitality facilities in Novi Sad is the subject of this paper.

The aim of this paper is to emphasize the importance of offering functional food in human nutrition through the analysis of supply and demand, as well as familiarity with this group of foodstuffs, that is, dishes. Also, an aim of this paper is to raise conscience of workers regarding the importance of consuming functional food. The objective of this paper is to answer the following research questions:

- Are hospitality workers familiar with characteristics of functional food?
- Do hospitality workers face demand of functional foods?
- Is there an option of preparing functional food in restaurants?
- Do workers think that guests are willing to pay extra for preparation of food which is beneficial to their health?

LITERATURE REVIEW

A new category of products which promises consumers an improvement in their physiological functions is functional food (Urala, Leahteenmeaki, 2004); it prevents obesity, provides conditions for vitality – health, psychophysical and working ability, and improves the quality of life in general (Jokić et al., 2016).

The International Life Sciences Institute (ILSI) defines functional food as a food product whose basic nutritional influence affects beneficially one or more body func-

tions and in this manner it either improves physical and general conditions, or reduces the risk of disease evolution (Roberfroid, 2000, Nelson, 2017), and it can be used in the treatment of some diseases (Menrad, 2003; Mark-Herbert, 2004).

The term functional food was coined in Japan in 1980 and it referred to food products enriched with nutrients which give them a positive physiological action (Hardy, 2000; Kwak, Jukes, 2001; Stanton et al., 2005). The tendency of 'functional food' production, that is, food which has a favourable effect on health with an appropriate nutritional action, has become the basis for the development of the modern food industry around the world (Mišan et al., 2013) and a part of a modern hospitality supply.

Functional food contains both necessary nutritive components and components which have beneficial effects on human health. We emphasize that functional food is required to have a positive effect on one or more desired body functions, higher than usual nutritional effects, in a way which is important for increasing health and welfare of the organism or reducing the risk of a disease (Diplock et al., 1999).

These are most often foodstuffs and dishes containing: probiotics, prebiotics, functional beverages, functional grains, bakery products, spreads and functional meat and eggs (Siró et al., 2008). According to the Datamonitor research (2004), key products with built-in components are dairy products (38.9%), non-alcoholic beverages (24.9%), bakery products and cereals for breakfast (24.6%), pastry products (8.9%) and salty snacks (2.6%).

The increasing consumers' interest in healthy food as well as aging of population and the demand for reducing the cost of public health system have caused the opening of the functional food market (Niva, Mäkelä, 2007), which develops thanks to the 'technological pressure' oriented towards exploring new possibilities for innovative products, and, to a lesser degree, towards a consumer's request (Scholderer, de Barcellos, 2008).

The research has shown that the development of functional food market depends on the knowledge and degree of acceptance of such food by consumers (Prodanović, Lazović, 2015). In order for functional food products to have a better position in the market, one should know: the profile of an ideal consumer, a competitor's offer and a possibility to differentiate products (Mitić, Gligorijević, 2012). Childs (1997) states that the level of consumers' understanding of the importance of nutrition in preserving health and reducing the risk of disease has increased as a result of numerous actions (of the government, public health system, education and campaigns).

Urala (2005) emphasizes that the feeling of satisfaction is the strongest motive for accepting and consuming functional food, whereas Verbeke (2005) is of an opinion that the main determinant of acceptance is the belief in health advantages of functional food. The research has also shown that consumers are readier for natural functional food, compared to food with added functional components (Siegrist et al., 2008), but they will gladly accept food enriched with functional components inherent in the original product (Ares, Gambaro, 2007). Disease prevention as well as experience with a disease increase the acceptance of functional food (Maynard, Franklin, 2003). Stojanović et al. (2014) state that consumers who are aware of health benefits of this food buy it even though they do not have problems with their health.

In the Republic of Serbia, when it comes to the functional food market, there are no official statistical data, massive emergence of such food began after 2000. The market

is still unsaturated and is dominated by domestic producers and brand names. Dairy products are most prevalent and there is a potential for further growth (Stojanović et al., 2010).

METHODOLOGY

The survey was conducted among workers in hospitality facilities for providing food and beverage services in Novi Sad. We selected facilities which appeared to be the most adequate for answering questions about the supply and demand of functional food.

The contents of the survey determined the application of appropriate methods, therefore the results of the survey were obtained:

- by using various domestic and foreign literature sources in the field of functional food;
- through field research (survey) and
- using statistical methods (descriptive, comparative and associative).

For research purposes, an appropriate survey questionnaire was created, which was distributed to persons suitable for the survey, then the data processing was started.

RESULTS AND DISCUSSION

The analysis of sociodemographic characteristics of the respondents

For the purpose of evaluating the results obtained by conducting the survey, we started with an analysis of sociodemographic characteristics shown in Table 1. The survey included almost an equal number of respondents of both genders. Respondents aged 18 to 30 were prevalent with a share of 70.5%, which is somewhat justified because people in the field of hospitality and food production were surveyed. Also, respondents with a university degree prevail in the survey with a share of as much as 63.9%. By observing the data on the area of education as a very important indicator, we conclude that most respondents are educated in the field of hospitality, as much as 66%.

Considering the place of work, it was found that the largest number of respondents are employed in classic *a la cart* restaurants, 43 % of them. Observing the volume of meal production in facilities where they are employed, 22% of respondents work in restaurants where they serve between 101 and 150 meals, 21% of respondents work in restaurants which serve between 151 and 200 meals a day on average, only 8% of respondents are employed in restaurants which serve between 201 and 250 meals a day, and as much as 25% of respondents work in big restaurants, restaurants with mass food production where more than 251 meals per day are served (Table 2).

Table 1. Structure of respondents (n = 105)

		Number of respondents	Share (%)
Gender	Male	51	49
	Female	54	51
Age group	from 18 to 30	74	70.5
	from 31 to 40	12	11.4
	from 41 to 50	9	8.6
	from 51 to 60	8	7.6
	Older than 60	2	1.9
Level of education	Primary school	2	1.9
	Secondary school	20	19
	Higher education	16	15.2
	University degree	67	63.9
Field of education	Hospitality	70	66
	Management	16	16
	Economics	7	7
	Chemistry/Food Technology	7	7
	Other	4	4

Table 2. Work engagement of respondents (n = 105)

		Number of respondents	Share (%)
Type of a hospitality facility	Hotel restaurants	31	29
	A la carte restaurants, national cuisines	45	43
	A la carte restaurants, special cuisines	26	25
	Other	3	3
Volume of meal production	Up to 50 meals per day	7	7
	From 51 to 100 meals per day	18	17
	From 101 to 150 meals per day	23	22
	From 151 to 200 meals per day	22	21
	From 201 to 250 meals per day	9	8
	More than 251 meals per day	26	25

THE ANALYSIS OF FAMILIARITY OF HOSPITALITY WORKERS WITH CHARACTERISTICS OF FUNCTIONAL FOOD

The concept of functional food is gradually becoming more popular among consumers, as well as with hospitality workers, although it is not uncommon that they know very little about food and proper nutrition. Lately, the awareness of consumers and their attitude towards health have significantly improved (Roberfroid, 2000), which is reflected in the demand that hospitality workers face. Considering only hospitality workers, as main participants in the survey, as many as 68% state that they are familiar with the term 'functional food'. After checking the familiarity with the term, its correct interpretation was checked, and as many as 80% of respondents gave the correct answer, i.e. they could, among the offered choices, interpret in the correct way and mark the description of this term.

THE ANALYSIS OF ACCEPTANCE OF HEALTH EFFECTS OF FUNCTIONAL FOOD ON HUMAN ORGANISM AND ATTITUDES TOWARDS IT

By analyzing the answers of hospitality workers in Novi Sad on the impact of food on people's health, we conclude that almost 90% of respondents partly or completely agree that food affects our health. A large number of respondents (88%) are familiar with the effect of certain foodstuffs and spices on people's health (Figure 1).

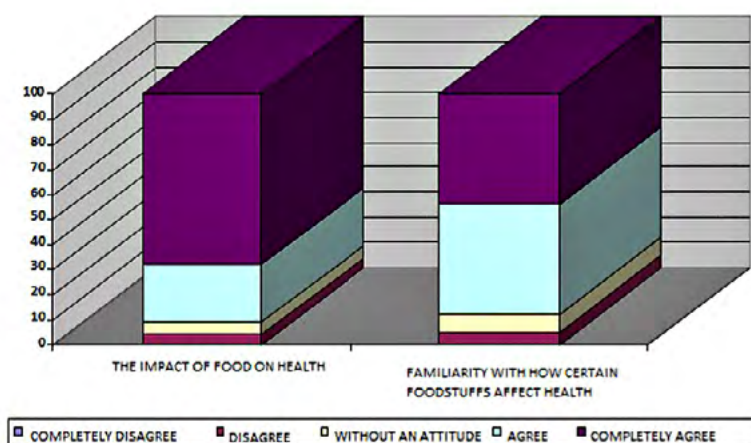


Figure 1. Attitudes towards impact of food on health and familiarity with it

THE ANALYSIS OF DEMAND OF FUNCTIONAL FOOD IN HOSPITALITY

The obtained data show a rather mixed image of the willingness of consumers to compromise on taste and other sources of pleasure and potential health benefits. It is clear that if functional food has the same sensory properties as non-functional, it is not a problem. However, where there is, for example, a difference in taste, texture and aroma, it can be a reason for some groups of consumers to reject new functional foodstuffs.

Obviously, there are differences in the importance given to enjoyment in food and health. We can expect that such differences will reflect on the compromise that consumers are willing to make between immediate satisfaction of the sense of taste and health benefits when choosing functional food over non-functional alternatives (Rozin et al., 1999). Comparing the pleasure of enjoying food among American, Japanese, Flemish-Belgian and French consumers, it was discovered that French consumers have the highest correlation between food and pleasure, whereas consumers in the USA have the lowest, which means that if functional food has a different taste from traditional food, we can expect that it will be rejected by consumers despite its properties which are potentially beneficial to health.

Urala and Latheemaki (2004), state that Finnish consumers are willing to compromise on food taste in order to improve their health, especially when it comes to juices enriched with probiotics, spreads for lowering cholesterol levels, milk for reducing blood pressure and meat products containing more fiber. Contrary to this, Verbeke (2006) discovers that Belgian consumers are not willing to compromise on taste for health benefits of traditional food. Less than 10% of respondents say they are ready to accept functional food if the taste is worse than classic food, and 40% of consumers are ready to accept functional food if it is delicious (Labreckue et al., 2006). However, it is perceived that modern consumers are more and more interested in personal health, expecting to be healthy or to prevent diseases if they consume the food in question (Granato et al., 2010).

The obtained data show an increased visibility of healthy food compared to an earlier period, as many as 37% of respondents agree that they notice healthy food more than before, and 14% completely agree. The research in Finland showed that the choice of functional food products is influenced by taste, pleasure, practicality, price and trust, more than by their positive impact on health. The feeling of pleasure is the strongest motive for the Finns to accept and consume functional food, Urala and Lachteenmaki state (2004). The conducted survey leads to a conclusion that guests who visit restaurants in Novi Sad are willing to compensate on the taste of food for its effects on health.

The research on whether hospitality workers in Novi Sad are often requested by guests to prepare food connected to their health issues (without salt, sugar, mayonnaise, gluten, etc.) shows that only in 10% of facilities there were no such requests, so we assume that those are specialized restaurants, where such requests are either implied or impossible in realization, which the guests are familiar with.

Munene's research (2006) showed that approximately 42% of respondents expressed their willingness to pay extra amount of at least 50% for food which has a health benefit. Whereas 61% of respondents were willing to pay a premium of at least 33%. These respondents have higher incomes, higher level of education, and/or they are aware of the

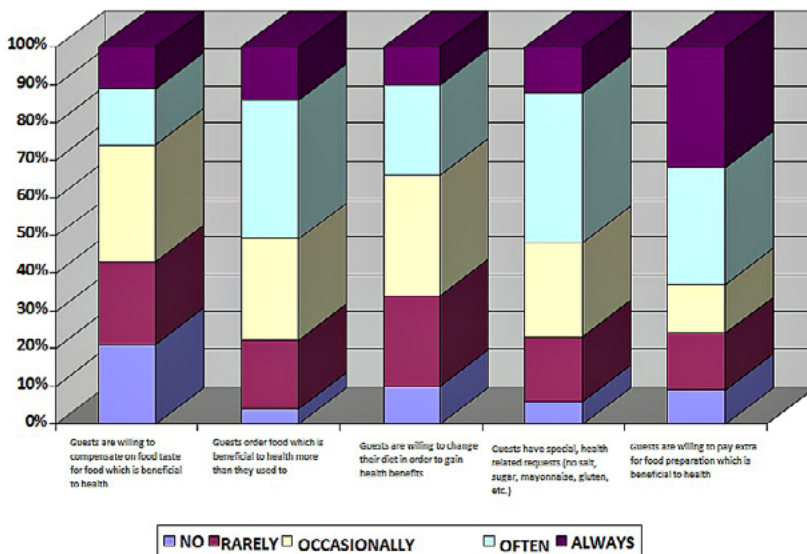


Figure 2. Demand and consumption of functional food

effects of food on health (Teratanavat, Hooker, 2006). Only if a consumer understands a functional benefit behind the nutritional value, they will accept a new functional food product (Bornkessel et al., 2011).

The respondents say that guests are willing to pay more for food which has positive effects on health, so we can conclude that there is a need for healthy food (Figure 2).

THE ANALYSIS OF POSSIBILITIES TO PREPARE AND OFFER DISHES WITH FUNCTIONAL PRODUCTS

By analysing abilities and knowledge of employees in hospitality facilities in Novi Sad, based on the the respondents' answers, we can say that about a half of the respondents believe they have enough knowledge to bring out of foodstuffs maximum health effects in the process of food preparation. When asked about the use of professional assistance provided by nutritionists in their business operations, a half of the respondents said that the restaurant where they work uses advice given by nutritionists, which is laudable. However, a share of those who do not use such advice is 27%. More than a half of respondents say that the restaurant where they work can offer dishes made of functional products. 11% Of respondents state that the restaurant where they work can always prepare functional food, and as many as 45% state this as an option, without further consideration. Based on the answers received, it can be stated that restaurants mainly do not plan to adapt their offer to guests who demand food with positive health effects. Only 7% of the respondents claim that restaurants where they work are completely prepared to adapt their offer to guests who have needs for functional food, and 26% of them agree with the claim, which is still a small share (Figure 3).

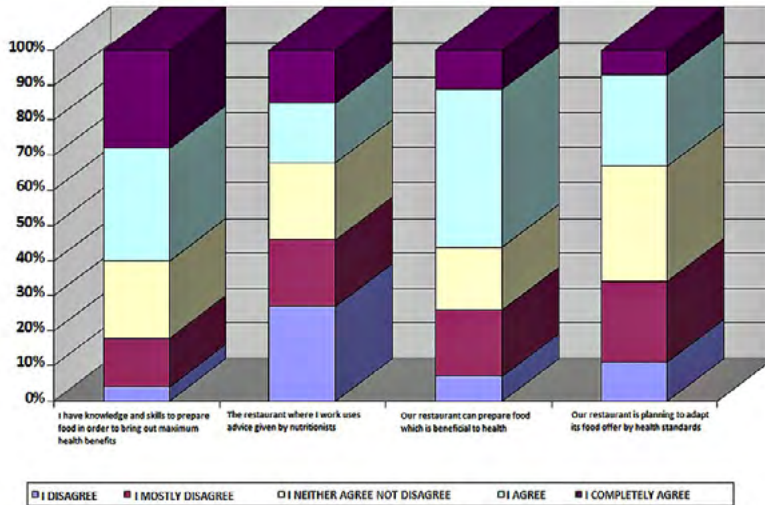


Figure 3. Abilities and readiness to prepare functional food in a hospitality facility

CONCLUSION

Based on the consulted literature in the field of food, nutrition and hospitality and the conducted survey among workers in Novi Sad, the following conclusions relevant for this research were reached:

- Hospitality workers in Novi Sad, who are important in the chain, are familiar with the term ‘functional food’, which is confirmed in the research.
- A demand for functional food exists, however, a quite uneven image of willingness of consumers to compromise (hedonism/health) is perceived. It is clear that if functional food has the same organoleptic properties as non-functional, it is not a problem; but, if the taste, texture and aroma are different, it can be a reason for certain consumer groups to reject new functional foodstuffs.
- Evidence on the degree to which consumers are willing to change their taste in order to gain potential health benefits of functional food varies. Some guests are of an opinion that the idea of functional food is good, but they do not make an effort to consume it. The research has shown that guests are willing to pay more for food which has positive health effects, which confirms that there is a need of guests for healthy food.
- Restaurants have an ability to prepare functional food, but the other structure of the received data leads to the conclusion that regardless of the proven demand for functional food and the ability to prepare it, restaurants have not harmonized their offer with it.

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CONFLICTS OF INTEREST

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