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THE COMPETITIVENESS OF FUNCTIONAL FOOD PRODUCTION

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Summary

Raising people's awareness about taking care of their health and development of the food industry, medicine, and those branches of science that deal with the relationship between nutrition and health has led to the popularization of the foods for which special health effects are proven. Functional foods are foods whose longer consumption can have preventive or therapeutic effects on different aspects of human health. It can be conventional with bioactive components, or "strengthened" so the risk of certain illness can be reduced. Despite increasing number of researches about functional food, there is a lack of information about psychosocial factors which influence on consumers' attitudes regarding functional food. Most research related to functional food is concentrated on its possible health effects, while relatively little is known about consumers' reaction to it. The aim of this work is to assess interest of consumers for buying functional food, according to obtained consumers' attitudes.

The survey has been conducted in area of Vojvodina, in cities such as Novi Sad, Subotica, Zrenjanin, Vršac, Ruma and Inđija, in the period from August 15th till September 10th, 2012. The example included 400 respondents, who were questioned with previously prepared questionnaires, mainly in supermarkets, where consumers can buy functional foods. Obtained results were analyzed in program package software SPSS 19 with use of descriptive statistics. According to the obtain results, it can be concluded that is necessary to further inform consumers about functional food and its benefits in regard to conventional food. Also, it is necessary to define market of functional food in Serbia, adopt certain regulations which can be helpful for increasing of consumers' confidence about functional food and make larger consumption of this kind of food, which can result in better health condition of the nation.

Key words: *functional food, consumers' attitudes, Vojvodina.*

JEL: *Q120, Q180*

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Introduction

Food, as a result of numerous and various activities within long and complex food chain, mainly is associated with three major requirements: to be safe, qualitative and to ensure safety regarding of supplying. Noted aspects present a common right of each individual, since the food is one of three conditions for life (Radovanović, 2007). Common nutritional and necessarily needed materials for the proper functioning of the human body are following: proteins, carbohydrates, fats, vitamins and minerals.

Raising an awareness of people about health care and development of food industry, medicine and natural sciences that study relationship between nutrition and health led to the popularization of groceries for which special health performance has been proved. Numerous scientific evidences support the fact that the nutrition enriched with certain groceries (for example, fruits and vegetables) is directly connected with decreased risk of chronic, non-infectious diseases. According to these acknowledgements, the concept of functional food is developed (Miletić et al., 2008).

There is no official, universally accepted definition of functional food. However, during 1998, EU in coordination with „International Life Science Institute Europe" adopted following definition: "Grocery can be declared as functional if it is proven that it has favorable effect on one or more organism functions in proper way, out of frames of common nutritive effects and in a way that is essential for overall health condition and reducing of risk of disease" (Diplock et al., 1999; Puvača et al., 2012a).

During the second half of 1980s, the concept of functional food firstly was developed in Japan. This concept includes the fact that food has three functions:

1) Nutritive, which is used to maintaining of life and growth of the body,
2) function of tastes as well as interaction with the sensory function of each component,
3) Defense of body or modifications which contribute to the preservation of health and prevention of disease (Goktepe, 2005).

Functional food differs from conventional food in several ways. Conventional "healthy food" is usually presented as a kind of food which contributes to healthy nutrition (products with reduced fat, products with high fiber content ...). Within functional food, special components are directly connected with well-defined physiological effects and health benefits associated with a certain product (Lähteenmäki, 2003). Known as a food for specific healthy consumption this food includes functional ingredients which influence on structure or function of the body (Arai et al., 2002).

Components of functional food, which are carriers of functions, mostly are grouped regarding their origin. Functional grocery can be made by adding biologically active ingredient to traditional grocery. In this way, traditional grocery expands its effect, or completely new product occurs, with specific content and physiological effect (probiotic fruit juice) (Miletić et al., 2008). Changing of food using biotechnology in order to improve its nutritional value and health properties can also create new functional products for the market, such as products with Omega 3 fat acids or oils without trans fats (www.

pewtrustsorg/Reports/Food_and_Biotechnology/PIFB_ Functional_Foods.pdf, 2009; Puvača et al., 2012b). Safety aspect becomes more important, especially with groceries which are intended for mostly sensitive groups of consumers, such as children, pregnant women and older people. No matter why functional component have positive impact on human health, toxicological observation needs to be conducted. In other words, the possibility of pathogenic, mutagenic or carcinogenic effect needs to be examined.

Most of researches about functional food are concentrated on its possible health consequences, while relatively little is known about the reaction of consumers on this food (Saher et al., 2004). Many indicators show that in era of conformism, the consumer is the main trigger of the economy or the main force of society. Nowadays, an individual approach to consumer is applied (Vlahović et al. 2011), because consumers in free markets are those who should dictate which and what kind of products and services are demanded. Even if food would fulfill its nutritive role, it does not mean that it will be accepted by consumers (Cesaretti et al., 2011), if they don't like its taste or any other feature. Therefore, research of consumers is a key process in development of functional groceries (Ares, Gámbaro, 2007). Previous studies concluded that consumers are skeptical regarding nutritive and health declarations (Vukelić et al., 2012), they do not make clear difference between nutritive and health declarations (although they think of them as potentially useful) and they more prefer shorter core statements rather than complex ones (Verbeke et al., 2009).

Despite increasing number of researches about functional food, it is little known which psychosocial factors contribute to consumers' attitudes about functional food (Devcich et al., 2007). One study discovered that uses of functional food and confidence in its properties are key factors regarding consumers' willingness to use such kind of products (Urala, Lahtemaki, 2004). Another study about accepting the functional food showed that confidence in health values of functional food presents main factor of acceptance (Verbeke, 2006). Previous researches noted that people, who do not use functional food, justify that with lack of knowledge, decreased interest in functional food and its price (Niva, 2006). Main argument contributing higher sale of functional food is that this food has a preventive influence on health condition, which has especially great influence on younger consumers, who seek for better quality of life (Cross, Frost, 2009). Many authors studied functional food in Serbia (Perić et al., 2011; Stojanović and Dragutinović-Mitrović, 2012; Radovanović, 2007; Miletić et al., 2008; Košutić, 2012), but, as far as it is known, none of them explored attitudes of consumers regarding functional food. According to previously noted, the aim of this work is to check consumers' attitudes regarding functional food, define their knowledge and interest to buy and consume this kind of food.

Materials and Methods

In order to determine consumers' attitudes respecting their interest for buying of functional food in Vojvodina, the research on this territory, in cities such as Novi Sad, Subotica, Zrenjanin, Vršac, Ruma and Indjija has been conducted. It was conducted during the period from August 15th to September 10th in 2012. Example included 400 consumers who were questioned, using previously prepared questionnaires, mainly in

supermarkets, where consumers can buy and functional food. The questionnaire included 3 groups of questions. First group was regarded to socio-demographic characteristics of respondents; second group was defined about their health condition, type of their health care, and kind of nutrition, while the third group included questions about functional food, their attitudes about it, knowledge, reasons for buying of this kind of food, etc. Survey results were analyzed by program package software SPSS 19 using descriptive statistics.

Results and Discussion

Socio-demographic characteristics of respondents are presented in table 1. Analyzed example includes larger presence of female respondents (61%) which can be explained by the fact that women spend more time in shopping and they are more ready for cooperation rather than men. Also, this example includes larger number of consumers of age between 26 and 35 years, with higher level of education (Table 1).

Table 1. Socio-demographic characteristics of sample (N=400)

Gender	male female	39% 61%
Region	urban rural	60% 40%
Age, years	18 – 25 26 – 35 36 – 45 46 – 55 more than 55	8% 35% 22% 17% 18%
Education	Primary school Secondary school University degree	4% 39% 57%
Net monthly income of the household in RSD	up to 15,000 15,000 – 30,000 30,000 – 75,000 75,000 – 150,000 more than 150,000	1% 14% 45% 36% 4%
Number of members in the household	one two three four five or more	12% 19% 24% 33% 12%

Source: Research results

During the research on consumers' attitude toward functional food, respondents answered on questions: a) Have you heard about the term known as functional food? b) Have you ever consumed some products which belong to functional food? Table 2 presents answers of respondents, regarding their socio-demographic characteristics.

Table 2. Answers to questions regarding to socio-demographic characteristics of respondents N=400

Socio-demographic characteristics of respondents	Have you heard about the term known as functional food?		Have you ever consumed some products which belong to functional food?	
	YES (%)	NO (%)	YES (%)	NO (%)
Gender				
- male	8	31	22	17
- female	11	50	36	25
Region				
- urban	11	49	32	28
- rural	8	32	26	14
Age, years				
- **18 – 25 years**	0	8	5	3
- **26 – 35 years**	13	22	18	17
- **36 – 45 years**	4	18	16	6
- **46 – 55 years**	2	15	10	7
- **More than 55 years**	4	14	9	9
Education				
- Primary school	0	4	0	4
- Secondary school	4	35	25	14
- University degree	15	42	33	24
Net monthly income of the household in RSD				
- up to 15000 RSD	0	1	1	0
- 15000 – 30000 RSD	2	12	5	9
- 30000 – 75000 RSD	9	36	26	19
- 75000 – 150000 RSD	6	30	22	14
- More than 150000 RSD	2	2	4	0
Total	19	81	58	42

Source: Research results

Only 19% of respondents answered that they have heard about the term – functional food. Most of them were women from the city, in the age 26-35, with higher and high education and monthly income of 30000 – 75000 RSD. Similar results were obtained by Menrad 2006, who implies that 20, 7% of respondents in Germany heard about this term. The percentage for other countries is following: 19, 1% in Poland, 33% in Spain, 10, 7% in UK.

After this question, the term for functional food is explained to respondents and then they answered if they used some of products which belong to functional food. Total of 58% confirmed and most of them (89%) claimed that they used yogurt with probiotic as a grocery which belongs to functional food. Also, those who have heard about this kind of food (58%) were asked to explain why they continued to buy it regarding their health condition, the way how they treat their health and their nutrition regime.

Table 3. Reasons why respondents decide to buy functional food regarding their health condition, way of nutrition and treatment to health

Questions regarded to health condition and nutrition of respondents	Why did you decided to buy functional food?			
	I think it has favourable influence on health (%)	I buy out of curiosity (%)	It was recommended by doctor or nutritionist (%)	It is more tasteful (%)
How would you describe your health condition?				
- Healthy and satisfied	23	5	0	6
- I have minor health problems	29	1	2	10
- I have serious health problems	12	0	4	8
What is your kind of nutrition?				
- Healthy	38	3	1	11
- Common	20	3	0	13
- Vegetarian	3	0	0	0
- Dietary	3	0	5	0
Do you take care of your health and in which way?				
- I don't care about my health	14	2	0	4
- I am trying to have healthy nutrition	22	1	4	16
- I exercise regularly	8	1	0	4
- I eat a healthy nutrition and regularly exercise	20	2	2	0
Total	**64**	**6**	**6**	**24**

Source: Research results

According to presented results (table 3), it can be observed that most of respondents (64%) believes that functional food can have a positive influence on human health. They are people with minor health problems, who believe to make positive influence on their health condition using healthy food. 24% of respondents buy functional food because they find it more tasteful, 6% of respondents buy functional food out of curiosity, while 6% of respondents, of which 2% have minor health problems and 4% have serious health problems, buy this kind of food by the recommendation of doctor or nutritionist. Menedar (2006) obtained similar results. He noted that consumers in Poland, Germany, Spain and UK stated that "very important" and "important" factor for buying of functional food is "to stay healthy" and "to do myself good". Factors for buying of functional food, "recommended by medical doctor or nutritional consultant" are noted as "less important" in Germany, while they are noted as "neutral" in Poland, UK and Spain.

Conclusion

The production of functional food in world and Europe increases its importance. Consumers are getting more aware of the importance of healthy nutrition and its influence on their health. The aim of this work was to observe attitudes of consumers, their interest in consuming the functional food and to define competitiveness of the production of functional food. The analysis of research results showed that very small number of respondents (19%) has heard for the term – functional food. However, when characteristics of functional food are explained to them, including its products on the market, 58% of them answered that they have used these products. Main reason of this use is that "they think it has a positive effect on health". According to previously mentioned, it can be concluded that is necessary to further inform consumers about functional food and its benefits in regard to conventional food. Also, it is necessary to define market of functional food in Serbia, adopt certain regulations which can be helpful for increasing of consumers' confidence about functional food and make larger consumption of this kind of food, which can result in better health condition of the nation.

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KONKURENTNOST PROIZVODNJE FUNKCIONALNE HRANE

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Rezime

Podizanje svesti ljudi o brizi za zdravlje, kao i razvoj prehrambene industrije, medicine i onih grana prirodnih nauka koje proučavaju odnos između ishrane i zdravlja doveo je do popularizacije namirnica za koje su dokazani posebni zdravstveni učinci. Funkcionalna hrana je ona hrana čijom se dužom konzumacijom može uticati preventivno ili terapeutski na različite aspekte zdravlja ljudi. Ona može biti konvencionalna sa bioaktivnim komponentama ili "ojačana" tako da smanjuje rizik pojave neke bolesti. Uprkos sve većem broju istraživanja o funkcionalnoj hrani, u ovom trenutku se malo zna koji psihosocijalni faktori imaju uticaj na stavove potrošača prema funkcionalnoj hrani. Većina istraživanja u vezi sa funkcionalnom hranom je koncetrisana na njene moguće zdravstvene posledice, a relativno malo je poznato o reagovanju potrošača na nju. Cilj rada jeste da se na bazi dobijenih stavovi potrošača oceni zainteresovanost potošača za kupovinu funkcionalne hrane.

Istraživanje je izvršeno na teritoriji Vojvodine, u gradovima Novi Sad, Subotica, Zrenjanin, Vršac, Ruma i Indjija u period od 15. Avgusta do 10. Septembra 2012. godine. Uzorkom je obuhvaćeno 400 potrošača koji su anketirani, uz pomoć već pripremljenih upitnika, licem u lice, najvećim delom u supermarketima gde potrošači mogu i da kupe funkcionalnu hranu. Dobijeni rezultati su analizirani u programskom paketu SPSS 19 uz pomoć deskriptivne statistike. Na osnovu dobijenih rezultata može se zaključiti da je neophodno više informisati potoršače o prednostima funkcionalne hrane u odnosu na hranu proizvedenu na konvencionalan način. Takođe, nužno je definisati tržište funkcionalne hrane u Srbiji, usvojiti određene regulative koje će doprineti većem poverenju potrošača prema istoj, što će za posledicu imati veću potrošnju fukcionalne hrane, a samim tim i uticati na poboljšanje zdravstvenog stanja nacije.

Ključne reči: *funkcionalna hrana, stavovi potrošača, Vojvodina*

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