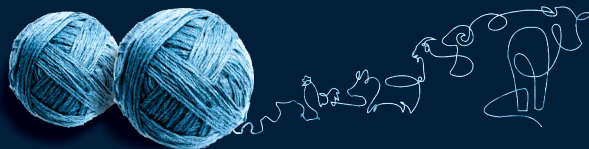


12th
INTERNATIONAL
SYMPOSIUM

MODERN
TRENDS
IN LIVESTOCK
PRODUCTION



P R O C E E D I N G S

9 -11 October 2019, Belgrade, Serbia

Institute for Animal Husbandry

Belgrade - Zemun, SERBIA

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PREFERENCES OF CONSUMERS' FROM SERBIA TOWARD ORGANIC EGGS

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Abstract: In order to examine consumers' preferences toward eggs from organic production and their willingness to allocate more money for these eggs, 581 respondents were surveyed in three regions of Serbia (the Belgrade region, the Šumadija and the Western Serbia region, and the Southern and Eastern Serbia region). Through the survey questionnaire, respondents declared themselves whether they are buying organic eggs and how much money they are ready to allocate for this type of eggs. Answers from surveyed respondents who are buying organic eggs were analyzed by gender, age, status, education, monthly income and the region in which they are living. According to the survey results, it can be concluded that in Serbia, there is a very small number of consumers who are buying organic eggs (2.41%), and that all of them are located in the Belgrade region. Furthermore, only 8.34% of consumers were willing to pay 30% higher price for organic eggs, on average for all three regions. Analyzing data within the category of organic eggs consumers, the highest tendency for buying organic eggs was determined for female respondents (76.92%), those with the higher education level (61.54%), the employed respondents (92.31%), the respondents aged from 36 to 55 (61.52%) and the respondents with the highest monthly household income (46.15%). The results of the present study indicate that the percentage of consumers who buy organic eggs in Serbia is very small, it is present only in certain regions and the willingness to pay more for organic eggs is low.

Key words: organic eggs, consumer, survey, regions, Republic of Serbia

Introduction

Statistical data on the organic eggs production in Serbia do not exist, but in the database of organic products producers led by the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia, on the basis of the reports from authorized control organizations for performing the control and certification of this production (*Directorate for National Reference Laboratories, 2019*), the number of laying hens in the status of organic production is monitored and recorded. According to the data from this database, the number of laying hens increased from 1,079 (2015) to 3,122 (2016), or 4,415 (2017). According to the same data source, observed regionally, in 2017 the largest number of 1079 (2,595) was found in the region of Šumadija and Western Serbia, and in the region of Vojvodina (1,515), while a significantly smaller number was recorded in Belgrade (200) and Southern and Eastern Serbia region (105). When viewed in relation to the total production of 1,759 million eggs in 2017 in Serbia (*Statistical Yearbook of the Republic of Serbia, 2018*) the production of organic eggs is modest, regardless the trend of increasing the number of hens in this production.

In Europe, organic poultry production, in the period from 2007 to 2015, recorded the highest increase (by 108%) within the organic livestock production (*Willer et al., 2017*). The statistical data indicate a tendency of increasing the number of poultry from "non-cage" systems (*Rakonjac et al., 2017*), which can be related to the major changes in the legal regulations in the field of animal welfare, sustainable and ecological production, food safety, as well as with increasingly pronounced attitudes and market demands of the customers. According to the *European Commission (2018)* data, the largest share of laying hens in the organic production system is in Denmark (31.1%), Sweden (16.1%), Germany (12%), Austria (11.6%) and Luxembourg (10.5 %).

Market monitoring in Europe in 2017 (*Willer et al., 2019*) has shown that the largest share of organic eggs in the total market value of organic products was in Denmark (32.6%), France (29.6%), Switzerland (26.6% %), Austria (21.6%) and Germany (21%), followed by Finland, the Netherlands, Belgium and Norway (15 to 20%). In Serbia there is no official data on the market share of organic eggs, and according to the research by *Tolimir et al. (2017)* conducted on the Belgrade market, as the largest in the country, organic egg supply is characterized by a small number of producers/suppliers, with sales only in some hyper/super-markets, a relatively small number of specialized organic food stores and several markets with special section for organic products.

According to the research conducted by *Rodić et al. (2010)*, in Serbia 26% of table eggs consumers would choose organic eggs, in the case they have the opportunity to choose. On the other hand, according to the research by *Tolimir et*

al. (2017), only 4% of table egg consumers in the City of Belgrade decide to buy organic eggs. According to research by *Vehapi (2015)*, the most significant consumer's motivation for purchasing organic food is health. Also, *Perić et al. (2015)* indicated that table egg consumers in Serbia choose organic eggs because they consider these eggs to be better for their health compared to eggs from conventional production. Among the most important reasons restricting or preventing the purchase of organic products *Vehapi (2015)* indicates the price, and *Vlahović and Šojić (2016)* point out that, besides the price, a significant limiting factor is also low purchasing power, which is a consequence of the low income. The aim of this paper is to determine the consumers' preferences in Serbia toward organic eggs, as compared to eggs from other production systems, as well as consumers' willingness to allocate more money for organic eggs compared to those from conventional production. At the same time, the purpose of the paper is to identify preferences in the group of organic egg consumers depending on the gender, education, status, age and the amount of income.

Material and Methods

Survey questionnaire included 581 consumers' on the territory of the Republic of Serbia, from three regions: Belgrade region (291 respondents), Šumadija and Western Serbia (158 respondents), and Southern and Eastern Serbia (132 respondents) region, out of a total of five, according to the regional division of Serbia (*Statistical Office of the Republic Of Serbia, 2018*).

The structured survey questionnaire consisted of:

a) information about the respondents obtained by completing the offered answers for the following categories: gender (male, female), education (secondary school, higher education), status (student, employed, retired), place of residence (entering), age (less than 18, 26-35, 36-55, 56-75) and the amount of income (30,000-40,000 RSD, 40,000-70,000 RSD and more than 70,000 RSD).

b) questions with the offered answers: 1) 'Which eggs do you usually buy?' - offered answers: eggs from conventional production, eggs from 'traditional' production, organic eggs and eggs from functional food programs (ω -3 fatty acids or selenium enriched omega eggs) etc.; 2) 'How much are you willing to pay more for eggs from organic production?' - offered answers: I am not ready to pay more, I am willing to pay less than 30% and I am willing to pay more than 30%.

For the group of respondents which stated to purchase organic eggs, the structure of customers was established by computing the share of consumers

according to the categories, more precisely putting in relation number of buyers according to the individual category (gender, education level, age, income level) with the total number of consumers within this group.

When processing the data, only questionnaires for which the examinees marked the category and answered the question were included in the analysis. Standard methods of analysis in Microsoft Excel program were used.

Results and Discussion

The results related to the consumers' preferences regarding the choice of eggs from different production systems/technologies in different regions of the Republic of Serbia are shown in the Table 1.

Table 1. Consumers' habits when buying table eggs in Serbia

Answers to the question: "Which eggs do you usually buy?"					
Eggs from different production systems	Branded eggs from conventional production	Eggs from traditional production (green market)	Organic eggs	Eggs from the functional food program	Other
Region					
Belgrade (%)	29.90	54.98	4.12	0.00	11.00
Šumadija and Western Serbia (%)	10.13	84.17	0.00	0.00	5.70
Southern and Eastern Serbia (%)	10.61	81.82	0.00	0.00	7.58
Total (%)	20.14	68.67	2.41	0.00	8.78

By examining the most common consumer preferences in Serbia toward eggs from different production systems/technologies (Table 1), differences depending on the region have been found. In total, the majority of consumers/customers tend to buy eggs from traditional systems at the green market, but it was found that in Belgrade region, only 54.98% of consumers buy eggs from traditional systems (at the green market), while this percentage is much higher the region of Šumadija and Western Serbia - 84.17%. In Belgrade region, a significant share of the consumers choose eggs of certain brand in hyper/supermarkets (about 30%), compared to the consumers in the Šumadija and Western Serbia (10.13%) and Southern and Eastern Serbia (10.61%) regions. The share of consumers who decide to buy organic eggs is very low, 2.41% on average in central Serbia, whereby, viewed by regions, it is 4.12% in the region of Belgrade,

while there are no consumers of this type of table eggs in the remaining two regions.

Compared to Serbia where there is an extremely small share of organic egg consumers/customers, in Poland consumers are having extremely positive opinion about organic food, and 65% of them stated that they buy organic eggs (*Žakowska – Biemans and Tekien, 2017*). One of the reasons for the low consumers' commitment in Serbia for the purchase of organic eggs may be a limited market offer of organic eggs, to which more attention should be paid in the coming period, especially in Šumadija and Western Serbia region, and the Southern and Eastern Serbia region. Researches world-wide suggest that market chains are considered to be factors that initiate the organic product market (*Rader et al., 2018*). Organic eggs have a significant place throughout European countries with a developed organic market with a share over 20% in Denmark, France, Switzerland, Austria and Germany (*Willer et al., 2019*).

The willingness of egg consumers in Serbia, according to the region, to pay more money for organic eggs is presented in the Table 2.

Table 2. Willingness of egg consumers to pay a higher price for organic eggs

Answers to the question: "How much are you willing to pay more for eggs from organic production?"			
Answers			
Region	I am not willing to pay more %	I am willing to pay more	
		Less than 30%	More than 30%
Belgrade region	28.82	58.78	12.40
Šumadija and Western Serbia region	25.45	66.46	8.09
Southern and Eastern Serbia region	28.79	66.67	4.55

Share of consumers in Serbia who expressed their readiness to allocate more money assets for organic eggs compared to conventionally produced eggs ranged from 71.18 to 74.55%, but those who expressed their readiness to single out more than 30% for organic eggs were in small percentage, ranging from 4.55% in the Southern and Eastern Serbia region to 12.4% in the Belgrade region. Considering that *Tolimir et al. (2018)* established that the price of organic eggs is greater than 2.05 to 3.07 times compared to conventionally produced eggs, i.e. that organic eggs are more expensive than the conventional ones from 104.7 to 207.7%, one can understand the result of this study, according to which only 2.41% of consumers in Serbia are choosing the organic eggs. The higher price of organic eggs is a result of higher production costs, and in Germany the price of organic production is at least twice as large compared to conventional ones (*Schaack et al., 2011*).

Also, it can be stated that in Serbia, the highest percentage of consumers/customers express the willingness to allocate up to 30% more funds for organic eggs, depending on the region from 58.78% to 66.67%. According to the research findings of *Rodić et al. (2010)* consumers in Serbia have shown willingness to single out 20% more money for eggs from “no cage” production systems. It is important to note that some authors point out that the high price of organic food negatively affects consumers' attitudes, which might be considered to be conditionally a barrier when purchasing them (*Lee and Yun, 2015; Vehapi, 2015*), whereas a number of authors established consumers' readiness in the EU and in the USA to pay higher price for organic products within a range from 10 to 30% (*Vapa - Tankosić et al., 2017*).

The results of the questionnaire survey obtained through the analysis within the consumer/customer of organic food group indicate the differences between individual categories regarding their preferences (Table 3).

Among the customers of organic eggs, the proportion of female sex was higher in comparison to male, those with higher education compared to the secondary education, those employed compared to students and pensioners, those aged between 36 and 55 compared to members of the younger and older population, with higher level of income the share of consumers/customers grew.

Table 3. Structure of organic eggs consumers

Structure of organic eggs consumers in Belgrade region	
Characteristic	%
Gender	
Male	23.08
Female	76.92
Education	
Secondary school	38.46
Higher education	61.54
Status	
Student	0
Employee	92.31
Pensioner	7.69
Age	
18-25	0
26-35	0
36-55	61.52
55-75	38.46
Monthly income (RSD)	
30,000-40,000	15.38
40,000-70,000	38.46
>70,000	46.15

Šojić (2017) determined that purchasing of organic products in Serbia is influenced by the consumer's life age, education level and the level of income. Vapa-Tankosić *et al.* (2017) point out on the differences among consumers in the willingness to buy organic products, depending on the gender, level of education, age, place of residence, household size and income.

Conclusion

The results of the survey show that although there are some differences between the different regions in the Republic of Serbia, only very small share (2.38%) of consumers/customers in Central Serbia decide to buy eggs produced in the organic production system. The reasons may lie in the relatively limited supply of the high-quality organic eggs on the market on the one hand, and on the other hand in the readiness of only a small number of consumers/customers (4.5 to 12% depending on the region) to allocate more than 30% more money for the organic eggs than for the conventionally produced eggs. The analysis of consumers/customers of organic egg suggests that when it comes to the purchase of organic eggs, women commit to it three times more often compared to men, and that the largest number of consumers can be found in the category of employees, with high education and with the highest incomes, which can be perceived as a target group. The increase in consumers' preferences towards organic eggs would contribute to higher informational and educational level amongst the consumers, as well as the creation of conditions for the organic eggs to become more available to the organic eggs consumers/customers in Serbia. Examination of consumers' attitude to organically produced eggs in Serbia is scarce and in this regard, this paper serves the purpose of establishing the starting point for the development of organic egg market, more broadly the development of organic egg production.

Preference potrošača/kupaca u Srbiji prema jajima iz organske proizvodnje

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Rezime

U cilju ispitivanja preferenci potrošača u Srbiji o jajima iz organske proizvodnje, kao i njihove spremnosti da izdvoje više novčanih sredstava za kupovinu jaja iz ovog sistema proizvodnje anketirano je 581 potrošač u tri regiona (beogradskom regionu, regionu Šumadije i Zapadne Srbije i regionu Južne i Istočne

Srbije). Kroz anketno ispitivanje potrošači su se izjasnili da li kupuju organska jaja i kolika je njihova spremnost da za jaja iz organskog sistema izdvoje više sredstava. Odgovori anketiranih potrošača koji kupuju organska jaja obrađeni su po polu, starosti, statusu, obrazovanju i sredini u kojoj žive. Prema rezultatima anketnog ispitivanja može se konstatovati da u Srbiji među potrošačima jaja je veoma mali udeo onih koji kupuju organska jaja (2,41%), kao i da su svi potrošači/kupci regionalno posmatrano iz jednog, odnosno Beogradskog regiona, dok ih nema u preostala dva ispitivanjem obuhvaćena regiona. Spremnost da plate više od 30% za jaja iz organske proizvodnje iskazalo je svega 8,34% potrošača, prosečno za sva tri regiona. Analizom podataka unutar kategorije potrošača organskih jaja najveća opredeljenost za kupovinu organskih jaja konstatovana je kod potrošača ženskog pola (76,92%), sa visokim obrazovanjem (61,54%), kod zaposlenih (92,31%), potrošača starosne dobi od 36 do 55 godina (61,52%) i sa najvećim mesečnim prihodom domaćinstva (46,15%). Rezultati rada upućuju na zaključak da se veoma mali udeo potrošača konzumnih jaja i to samo u pojedinim regionima Srbije opredeljuje za kupovinu organskih jaja, a da je spremnost da plate više za ova jaja niska. Povećanju preferenci potrošača prema organskim jajima doprinela bi bolja informisanost i edukovanje potrošača, kao i stvaranje uslova da organska jaja u pogledu cene i tržišne ponude budu dostupnija potrošačima/kupcima jaja u Srbiji.

Ključne reči: organska jaja, potrošač/kupac, anketa, region, Republika Srbija

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