

## ORGANIC FOOD IN THE COMMERCIAL OFFER AND CONSUMER PREFERENCES WHILE PURCHASING IT

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**Abstract.** Consumers are increasingly more interested in the issues associated with high-quality food (organic food); consequently, the number of organic farms and commercial establishments which offer organic products with quality certificates is growing. Podkarpackie voivodeship, thanks to certain advantages, is a favorable place for the development of organic farming. For the needs of this research, a survey was conducted in spring 2015 among 137 inhabitants of Rzeszów and the surrounding areas who declared to be consumers of organic food. An analysis of the results provides the conclusion that organic products are very positively evaluated by the respondents, since in their opinion they have a great impact on their health, which is the main reason for purchasing them. Sales and consumption growth of organic foods can be achieved by intensive advertising using the latest methods and techniques, as well as by educating society. These activities should be particularly targeted at the inhabitants of medium-sized towns, and a convincing argument should be made to draw attention to the ingredients in organic food.

**Key words:** organic agriculture, organic food, consumer, preferences

### INTRODUCTION

At the moment, ecological problems of the world are becoming more and more serious, which has an impact on shaping human health. Moreover, countries with a mature market economy have already started to provide activities to the benefit of the ecological ways of

the food production and a development of the eco-agriculture due to the numerous threats for quality of the environment (Żakowska-Biemans, 2011). The production of organic food has become one of the priorities in the European Union, what brings health benefits due to a value of the product and natural methods of its production (Piotrowska, 2014). These issues have also a practical meaning for Poland, which has been realizing an idea of the sustainable socio-economic development for many years (Łukasiński, 2008).

An observable increase in the environmental pollution and ecological imbalance in the contemporary world becomes a more and more noticeable problem in many countries. The changes in food production consist in, among others, use of genetic engineering achievements (GMO) in agriculture, an increasing intensity of food production in the agriculture and industry at the cost of its quality and health safety. As a result of this activity a depletion of landscape qualities of the natural environment occurs, as well as destruction of surface and ground water, degradation and soil erosion and a threat to consumer's health.

An alternative to the intensive farming and industrial food production methods is developing the ecological farming and traditional methods of the foodstuff manufacturing. They allow for obtaining lower crops, but of the highest quality, while ensuring a maximum protection of the environment and health of the consumer. It positively affects fertility and quality of soil, a diversity of the landscape and a biodiversity of organisms,

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and first of all, health and life quality of people and farm animals (Kwasek, 2013).

Knowledge of the society within the scope of the organic farming is constantly extended, an interest in the high-quality food increases with a growing number of the organic farms and commercial establishments which offer organic products with a quality certificate. Recently organic food has gained a popularity among people who take care about their own health and health of their closest persons (Zrałek, 2010; Grzybowska-Brzezińska, 2011). The products of this type are characterized by a high organoleptic quality and nutritional value, what is the primary motive of purchasing them. Achieving very good quality is possible due to the harmoniously balanced ingredients of the products, a lack of foreign impurities, using ecological methods of processing and not applying genetically modified material (GMO). The method of manufacturing of organic products is not a threat for the environment, but it is favourable to the concept of sustainable development (Sokołowska, 2005).

The Podkarpackie voivodeship is a good place for the development of organic farming due to its natural and social characteristics, based on the use of the rights governing the nature, without using chemical fertilizers and chemical plant protection measures (Romankiewicz and Krupa, 2012). It is of a particular importance in the protected, naturally valuable areas, which constitute a large part of the voivodeship area and highlight its unique attractiveness. It is due to the fact that almost half of the voivodeship is included into the nature protection in its various forms. As a consequence, it has been considered as a region of a rather balanced development of the organic farming, and its share of the ecological arable lands belongs to one of the highest in the country (Szarek and Nowogródzka, 2015).

The aim of the undertaken research was a determination to what extent the inhabitants of the town and visitors are interested in purchasing ecological products and what are the main reasons of their decisions. An analysis of the eco-production market in the Podkarpackie voivodeship may have important implications for food manufacturers and food processing plants in order to match a supply and a demand on the organic food market. A need to stimulate a demand among food consumers is indicated in Siedlecka (2014) and Smoluk-Sidorska's (2010) studies.

## RESEARCH METHODS AND MATERIALS, ANALYSIS OF THE RESULTS

The study was based on the survey conducted among customers of the specialized stores which offered organic food in spring 2015.

The survey was related to the issues connected with organic food – a consumption frequency, factors which determine this consumption, as well as an identification of trends occurring on the market of organic foods. The survey involved 137 people, i.e. the inhabitants of Rzeszów and the surrounding area. The characteristics of the study population was presented in Table 1.

The largest group of respondents were women (73%), in addition persons aged 20–30 years (39.4%), living in towns with more than 100 thousands inhabitants (41.6%), specifying their financial situation as good (51.1%).

The respondents were asked questions, among others, what is organic food, how does it differ from conventional food, as well as, questions about a frequency and reasons of its consumption, purchase places and factors determining organic food purchase.

The answers to the survey questions were collated with selected socio-economic features (using a chi-squared test of independence, if possible). Pearson's chi-squared test of independence was used in the analysis of the survey. The hypothesis of the feature independence was rejected when a calculated value of the test statistics exceeded a critical value for the accepted level of significance ( $\alpha = 0.05$ ). The values of the chi-squared test of independence are presented in the Table 2.

As it results from the data in the Table 2, a frequency of the purchases of organic food depends on the age, a marital status, a place of residence and does not depend on the financial situation/status.

Among the given products, purchasing of organic eggs is related to the age of the respondents; purchasing herbs and honey is associated with a marital status, while buying organic dairy products and fruits depends on the place of residence of the researched persons.

In the case of other product categories no significant dependencies were reported. The place of purchasing of organic products depends on the age and place of residence of the respondents, while an estimation of the store number offering organic food is related to the place of residence. The ingredients of organic products constitute a factor by the respondents are guided depending on

**Table 1.** Characteristics of respondents  
**Tabela 1.** Charakterystyka respondentów

	Socio-economic feature Cecha społeczno-ekonomiczna	Population size Liczebność	%
Sex – Płeć	Female – Kobieta	100	73.0
	Male – Mężczyzna	37	27.0
Age – Wiek	20–30 years old 20–30 lat	54	39.4
	31–40 years old 31–40 lat	35	25.5
	41–50 years old 41–50 lat	14	10.1
	51 years old and more 51 lat i więcej	33	24.0
	Place of Residence Miejsce zamieszkania	Village Wieś	33
	Town up to 50 thousand inhabitants Miasto do 50 tys. mieszkańców	28	20.4
	Town 50–100 thousand inhabitants Miasto 50–100 tys. mieszkańców	18	13.0
	Town above 100 thousand inhabitants Miasto powyżej 100 tys. mieszkańców	57	41.6
Marital status Stan cywilny	Married – Zamężna/zonaty	69	50.4
	Single – Stanu wolnego	68	49.6
Financial status Sytuacja materialna	Very good – Bardzo dobra	4	2.9
	Good – Dobra	70	51.1
	Average – Przeciętna	57	41.6
	Bad – Zła	6	4.4

Source: own elaboration.  
Źródło: opracowanie własne.

a place where they live; whereas the nutritional value of ecological products is of no importance. In general, motivations supporting purchasing of organic food depend also on the age and a marital status. Monthly expenditures on organic food are not determined by any socio-economic variables.

For these variables, which are determined by one socio-economic factor, in the further stage of the analysis a quotient of the observed and expected numbers was used to show these categories of variables that predetermine a statistical significance of the relationship. Table 3

summarizes a percentage ratio between the observed and expected numbers for the category of the socio-economic features and variables with regard to the issue of organic food at the statistically significant values of Pearson's chi-squared test of independence (for one factor).

An opinion about the number of the commercial establishments where one can obtain organic food depends on the respondents' place of residence. Persons living in the villages much more often considered that the number of such stores is too small (observed number is 117.7%

**Table 2.** Values of chi-square test of independence  
**Tabela 2.** Wartości statystyki testu niezależności (chi-kwadrat)

Indicator Wskaźnik	Age Wiek	Place of residence Miejsce zamieszkania	Marital status Stan cywilny	Financial situation Sytuacja materialna
Purchase frequency of organic food Częstotliwość zakupu żywności ekologicznej	22.490*	14.735*	8.085*	1.825
Organic food – breadstuff Żywność ekologiczna – pieczywo	5.316	1.082	0.652	1.812
Organic food – vegetables Żywność ekologiczna – warzywa	0.213	0.737	0.091	1.086
Organic food – herbs Żywność ekologiczna – zioła	4.172	4.815	4.339*	0.826
Organic food – dairy products Żywność ekologiczna – nabiał	1.078	7.636*	0.501	1.843
Organic food – fruits Żywność ekologiczna – owoce	3.322	9.208*	1.426	0.007
Organic food – tea Żywność ekologiczna – herbata	0.901	0.319	0.689	0.175
Organic food – eggs Żywność ekologiczna – jaja	10.855*	2.977	0.003	0.319
Organic food – juices Żywność ekologiczna – soki	1.612	4.773	0.555	0.378
Organic food – oils Żywność ekologiczna – oleje	2.760	5.044	0.419	0.426
Organic food – meat Żywność ekologiczna – mięso	3.117	0.704	0.023	0.222
Organic food – cereals Żywność ekologiczna – produkty zbożowe	2.896	4.166	0.453	0.070
Organic food – honey Żywność ekologiczna – miód	3.468	1.829	4.270*	1.210
Grocery as a place of a purchase of organic food Sklep jako miejsce zakupu żywności ekologicznej	13.443*	12.601*	3.328	0.815
Number of stores with organic food products Liczba placówek z żywnością ekologiczną	2.670	19.872*	4.675	5.317
Nutritional value as a factor of organic food purchasing Wartość odżywcza jako czynnik zakupu żywności ekologicznej	3.579	1.375	1.257	1.921
Ingredients as a factor of organic food purchasing Składniki jako czynnik zakupu żywności ekologicznej	3.566	7.843*	0.177	0.137
Reasons of organic food purchasing Motyw zakupu żywności ekologicznej	11.485*	5.379	17.837*	0.572
Amount spent on organic food Kwota wydawana na zakup żywności ekologicznej	6.754	1.872	2.555	1.394

Symbol \* means statistically significant value of chi-squared at the significance level of 0.05.

Source: own elaboration.

Symbol \* oznacza statystycznie istotną wartość chi-kwadrat przy poziomie istotności 0,05.

Źródło: opracowanie własne.

**Table 3.** Relations between observed and expected population sizes for chi-square test of independence  
**Tabela 3.** Relacje między liczebnościami obserwowanymi i oczekiwanymi w teście niezależności chi-kwadrat

Place of residence Miejsce zamieszkania	Number of stores offering organic food Liczba placówek sprzedaży żywności ekologicznej			Food ingredients Składniki żywności
	Enough Wystarczająca	Too little Zbyt mała	I don't know Nie wiem	
Village Wieś	95.1%	117.7%	89.3%	121.8%
Town up to 50 thousands Miasto do 50 tys.	186.8%	19.8%	121.4%	115.9%
Town up to 50–100 thousands Miasto 50–100 tys.	58.1%	92.5%	125.9%	85.9%
Town > 100 thousands Miasto > 100 tys.	73.4%	131.5%	87.5%	84.1%

Source: own elaboration.  
 Źródło: opracowanie własne.

of the expected number). The opinions of persons from small towns (with a population up to 50 thousands) varied. A significant proportion of those respondents thinks that there is the sufficient number of stores selling organic food, and has no opinion on this subject (observed number is respectively of 186.8% and 121.4% of the expected number). Similarly, a significant proportion of the respondents living in medium-sized towns (50–100 thousands of inhabitants) has no opinion on whether the number of stores is sufficient (observed number is of 125.9% of the expected one). Only residents of large towns (with a population above 100 thousands of inhabitants) acknowledge that the number of the commercial establishments of this type is too small (observed number is of 131.5% of the expected number).

The organic food ingredients are a key reason for buying these products mainly for persons from villages and small towns, with a population up to 50 thousands of inhabitants (observed number is of 115.9 and 121.8% of the expected number).

For the variables determined by more than one socio-economic feature, was used a multiple correspondence analysis (for statistically significant values of chi-square). Correspondence analysis is a technique, that gives information about the structure of connections between the columns and rows of a contingency table. Analysis of statistics and graphs – possible in this method – allows simple and intuitive inference about the relations

occurring between categories of variables. With regard to the observed characteristics, correspondence analysis was executed to identify and assess a co-occurrence of respondent segments highlighted due to the age, a place of residence and a marital status and categories of tested variables, and allowed for a graphical presentation of the relationship between socio-economic factors and categories of variables with regard to organic food.

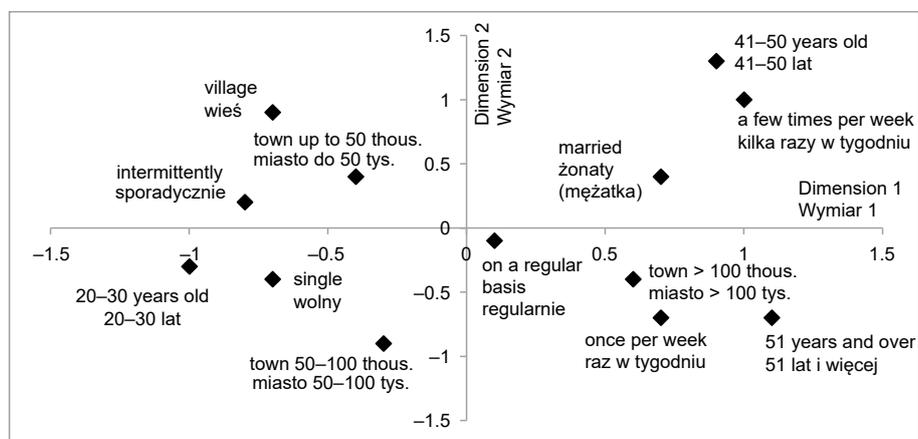
On Figures 1–4, relations between socio-economic factors and categories of variables concerning organic food were graphically presented, obtained from using correspondence analysis.

The connections between categories of the socio-economic features and a frequency of the consumption of organic food are shown in Figure 1.

According to the data presented in Figure 1, one can say that the intermittent consumption of organic food is declared by persons living in villages and small towns, with population up to 50 thousand people. The persons over 51 years old, living in large towns with a population exceeding 100 thousand people, consume organic food once a week, and married persons aged 41–50 years old consume organic products several times a week.

Figure 2 shows a co-occurrence of the socio-economic features and a store as a place of purchasing organic food.

As results from a proximity of features of the features presented in Figure 2, the organic food store is the

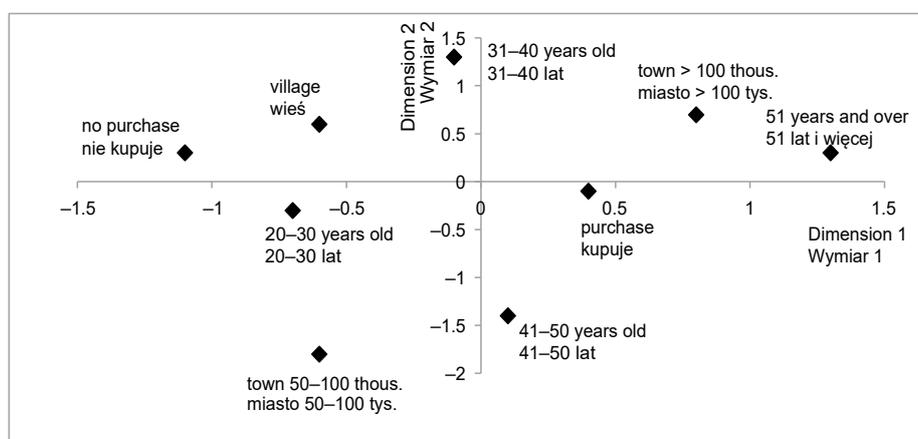


**Fig. 1.** Configuration of the respondent segments and a consumption frequency of organic food

Source: own elaboration.

**Rys. 1.** Konfiguracja segmentów respondentów oraz częstotliwości spożywania żywności ekologicznej

Źródło: opracowanie własne.



**Fig. 2.** Configuration of the respondent segments and a store as a purchasing place of the organic food

Source: own elaboration.

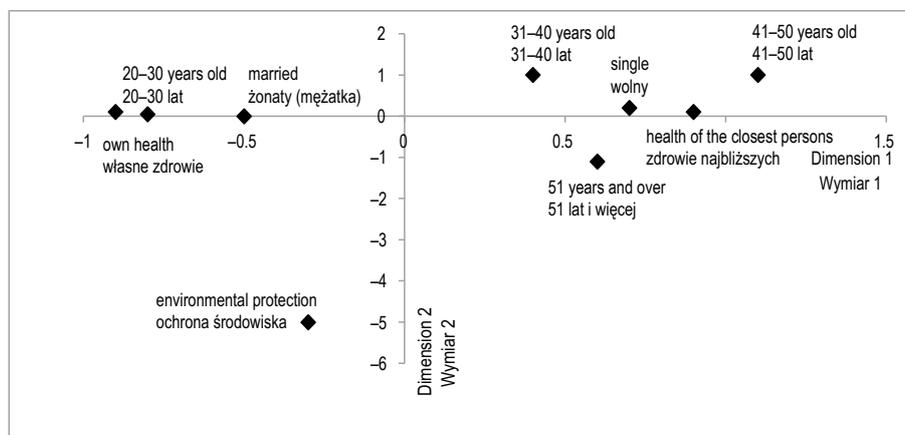
**Rys. 2.** Konfiguracja segmentów respondentów oraz sklepu jako miejsca nabywania żywności ekologicznej

Źródło: opracowanie własne.

place to purchase it, especially for persons over the age of 51 years, living in the towns with a population above 100 thousands. Such a store is not the place where organic food is bought by the youngest respondents, aged

20–30 years, living in the villages and in the towns with a population not exceeding 50 thousands inhabitants.

Figure 3 shows a co-occurrence of the socio-economic features and reasons of the organic food consumption.

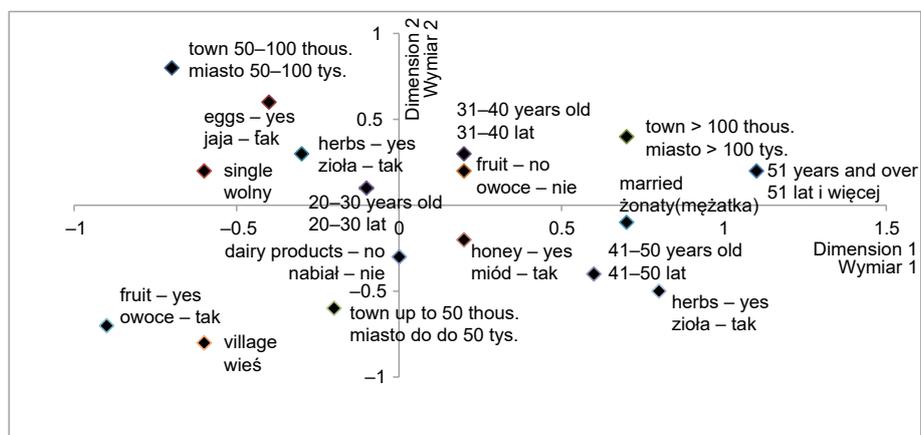


**Fig. 3.** Configuration of the respondent segments and reasons for the organic food consumption

Source: own elaboration.

**Rys. 3.** Konfiguracja segmentów respondentów oraz motywów konsumpcji żywności ekologicznej

Źródło: opracowanie własne.



**Fig. 4.** Configuration of the respondent segments and categories of the purchased organic products

Source: own elaboration.

**Rys. 4.** Konfiguracja segmentów respondentów oraz kategorii nabywanych produktów ekologicznych

Źródło: opracowanie własne.

The configuration of the points presented in Figure 3 authorizes to state that taking care about one's own health is the reason for consumption of organic food of the single persons who are under the age of 30 years old. The surveyed married persons over 30 years old

indicated taking care about the closest persons as a motive of the organic food consumption.

Figure 4 presents the co-occurrence of categories of the socio-economic features and categories of the purchased organic products.

The configuration of the points presented in Figure 4 reveals the fact that the respondents from the towns with a population about 50–100 thousand inhabitants mostly purchase eggs in the organic food stores. In turn, these stores are the place of purchasing honey in the case of married persons, and those aged 41–50 years—the place to purchase herbs. On the other hand, village residents purchase fruit in the organic food stores what can be hardly understandable.

The following observations can be made on the basis of the conducted research:

- Organic food is becoming more and more appreciated by Polish consumers, especially among people with higher incomes, and secondary and higher education;
- Organic products are assessed very positively by the respondents since in their opinion such products have a big impact on the health, what is the main motive for purchasing them. While the fact that organic farming contributes to the protection of the environment and the conservation of biodiversity, it is kind of secondary motive for buying organic food;
- The most common way to acquire organic food is buying it in the specialized stores;
- The increase in the sales and consumption of organic food is possible by providing an intensive promotion, using modern methods and techniques, and the environmental education of the society. These actions should be especially targeted at the inhabitants of the medium size towns, and a convincing argument may be paying attention to the ingredients of organic food products.

## SUMMARY

Nowadays it is not possible to shape a consumption model, which will consider only the nutritional aspects and health safety. Condition and safety of the environment in which we live, and in which food is produced and processed are also important. Therefore, not noticing a connection which exists between the quality of our food and the quality of the environment will lead (and has already led) to adverse changes in the environment, which will worsen the food quality and the condition of human health.

The EU food quality policy is focused on the promotion and protection of the originality of the products, which are characterized by strict determination of the

environmental performance of the product. A growing demand for natural products of the high quality like organic or traditional foodstuff provides an opportunity for the Polish agriculture, mainly caused by the increase in the knowledge and awareness of consumers within a scope of the risks resulting from the application of the industrial methods for the growing crops or animal husbandry. An alternative to the industrial, highly processed food is organic food, a production of which respects the environment and reduces the risk of health hazards resulting from the toxic pollution of the agricultural raw materials and processed products.

After an accession of Poland to the European Union, new challenges and opportunities of the development have appeared, but in order to be able to take advantage of this, there is need to understand determinants of the consumer behavior related to the food market (Krupa, 2010). The society is aware of the benefits of eating organic food, but it does not influence the volume of the demand. The reason for this is a problem of the price of organic products. Poland does not belong to the countries which dominate in the organic agricultural production, whereas it has a great potential for this method of food production, used to a law extent. This potential is mainly due to the agricultural traditions, large labour force resources in the rural areas, especially in the family farms, a purity of the environment, including soil, a landscape diversity, an increasing environmental awareness of consumers and still unexploited opportunities of exporting the Polish processed agri-food products (Romankiewicz and Krupa, 2012).

The positive phenomenon is an increase in the popularity of organic food, together with an increase in the number of commercial establishments that offer this kind of products. However, the public knowledge related to organic products and the basic methods of its manufacturing is still at the low level, as well as the knowledge about healthy eating. The organic food consumers in Rzeszów the most often purchase products in the specialized stores, which offer is more varied than in the remaining commercial establishments offering eco-food. There is no apparent relationship between a place of residence and a place of buying organic products since in each group a tendency to buy them in the specialized stores was noticed. Most people buy organic food intermittently and at the occasion, but there is a group of customers, who make purchases on a regular basis.

The market of organic products is promising and there are opportunities to increase their share in the Polish foodstuff market. There is, however, a need for providing a continuous promotion of organic farming, using more modern and more interesting methods of the transmission to reach more and more customers and increase their awareness in this subject matter. Vast majority of consumers believe that the best methods of promotion are organized fairs of organic products, and placing advertisements in the media.

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## ŻYWNOSĆ EKOLOGICZNA W OFERCIE HANDLOWEJ I PREFERENCJE KONSUMENCKIE PRZY JEJ ZAKUPIE

**Streszczenie.** Wśród konsumentów wzrasta zainteresowanie problematyką żywności wysokiej jakości (żywności ekologicznej). Zwiększa się zatem liczba gospodarstw ekologicznych i placówek handlowych oferujących ekoproducty z certyfikatem jakości. Województwo podkarpackie, ze względu na swoje walory, stanowi dobre miejsce dla rozwoju rolnictwa ekologicznego. Na potrzeby niniejszego opracowania przeprowadzono badania ankietowe wśród mieszkańców Rzeszowa i okolic deklarujących spożywanie żywności ekologicznej. Analiza wyników badań upoważnia do stwierdzenia, iż produkty ekologiczne oceniane są przez respondentów bardzo pozytywnie, gdyż w ich opinii mają duży wpływ na zdrowie, co jest głównym motywem ich zakupu. Wzrost sprzedaży i spożycia żywności ekologicznej jest możliwy dzięki prowadzeniu intensywnej promocji, z wykorzystaniem nowoczesnych metod i technik oraz edukacji ekologicznej społeczeństwa. Działania te należy kierować szczególnie do mieszkańców miast średniej wielkości, a przekonującym argumentem może być zwrócenie uwagi na składniki żywności ekologicznej.

**Słowa kluczowe:** rolnictwo ekologiczne, żywność ekologiczna, konsument, preferencje

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