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ANALYSIS OF THE ORGANIC FOOD ASSORTMENT FROM POLISH AND FOREIGN PRODUCERS IN SELECTED WARSAW STATIONARY AND ONLINE SHOPS

Summary

Consumers increasingly appreciate high quality and nutritional value of organic products. Therefore distribution network is growing, organic food is offered by all sorts of shopping centers and online stores. The aim of the study was to analyze and evaluate the range of organic food of Polish and foreign origin available in select retail locations in Warsaw, and online stores. Results show that the range of products offered by Internet shops is much richer than in retail stores. In both types of shops the assortment is not sufficiently varied. The stores offer a variety of sweets and snacks, teas, soft drinks and juices and products from the group such as groats, rice, sesame seeds and grains. The products from groups such as meat, dairy products, mushrooms, wine, desserts, ice cream, additions to the desserts are lacking. There is also evident lack of fresh fruits and vegetables. Priority should be given to increase the availability of organic products in the areas of distribution, as well as to increase the range of products offered by Polish producers. It is also necessary to augment the consumer awareness of high quality and nutritional value of organic products.
***Key words**: organic products, stationary stores, online shops, domestic and foreign manufacturers*

ANALIZA I OCENA ASORTYMENTU ŻYWNOŚCI EKOLOGICZNEJ POCHODZĄCEJ OD POLSKICH I ZAGRANICZNYCH PRODUCENTÓW W WYBRANYCH SKLEPACH DETALICZNYCH STACJONARNYCH NA TERENIE WARSZAWY ORAZ W SKLEPACH INTERNETOWYCH

Streszczenie

Konsumenci coraz bardziej doceniają walory żywieniowe i wysoką jakość produktów ekologicznych. Rozrasta się zatem sieć dystrybucji, żywność ekologiczną oferują różnego rodzaju placówki handlowe i sklepy internetowe. Celem pracy była analiza i ocena asortymentu żywności ekologicznej pochodzenia polskiego i zagranicznego dostępnego w wybranych placówkach handlowych na terenie Warszawy oraz sklepach internetowych. Wyniki pokazują, że asortyment oferowany przez sklepy internetowy jest o wiele bogatszy niż w sklepach stacjonarnych. W obu typach sklepów asortyment nie jest wystarczająco urozmaicony. Oferuje się wiele słodyczy i przekąsek, herbat, napojów i soków oraz produktów z grupy kasz, kaszek, ryżów, sezamu i ziaren. Brakuje natomiast produktów z takich grup ekologicznych w miejscach dystrybucji, zwiększanie wachlarza oferowanych produktów przez producentów polskich jak mięso i wędliny, nabiał, grzyby, wino oraz desery, lody, dodatki do deserów. Brak także oferty świeżych warzyw i owoców. Priorytetem powinno być zwiększanie dostępności produktów producentów oraz przede wszystkim ciągłe zwiększanie świadomości konsumenckiej na temat wysokiej jakości oraz walorów żywieniowych produktów ekologicznych.
***Słowa kluczowe**: produkty ekologiczne, sklepy stacjonarne, sklepy internetowe, producenci krajowi i zagraniczni*

1. Introduction

Organic food in accordance with Council Regulation (EC) No 834/2007 is produced in such system of management and food production which combines best environmental practice with meeting the requirements of those consumers who prefer products produced with natural substances and processes. Organic processed products should be produced according to the organic production rules laid down in the applicable legislation.

All organic products should be marked with the appropriate logo so that the consumer can easily identify them. Both the organic farms and processing plants shall be subject to inspection by the appriopriate certifying bodies [4, 11, 18]. Numerous regulations, certification and, above all, conscious approach of the producers and processors provide high-quality products.

High quality of organic products is confirmed by numerous scientific studies stating a lower content of nitrates and nitrites, lack of pesticides and residues of antibiotics and hormones [5, 19]. In addition, organic plant products contain more minerals, vitamins (especially vitamin C), a larger amount of dry matter, phenolic compounds, including anthocyanins, essential amino acids, sugars, and total sugars. Organic animal products contain higher levels of omega 3 fatty acids, vitamin E and iron [1, 5, 8, 10, 18]. Organic processed foods exhibit a higher polyphenol content and antioxidant activity than conventional ones [22].

Consumer awareness in terms of the quality of organic products is growing but still not satisfactory; 69% of consumers say that it is healthier, and 57% say that it does not contain artificial additives, i.e. preservatives, flavourings, colourings, antibiotics [22]. Especially high quality of eco-products, health benefits and animal welfare lead buyers to pay higher prices [2, 14].

Dynamic development of the organic production and increasing availability of the range of certified organic food has been happened in last years. In 2012, Poland ended up in third place in terms of number of organic farms in the member countries of the European Union. As of 2014 we can notice a slight decrease, however since 2016, will can see again a small increase (0.7%), and it is assumed that development rate of this market is likely to remain at the level of at least 15%, so that in 2020 it should exceed the value of the 210 m euro [22]. In terms of surface organic Poland is in fifth place in Europe (657.9 thousands ha) [2].

An impressive increase in the organic processing sector is the part of the constant development of the organic market in Poland. In 2016, the organic processing factories amounted to 705, what means an increase up to 92.2% with respect to the year 2014 when Poland became the member of the EU [21]. the European Union.

Report of the IMAS International [15] shows that most Poles are buying fresh organic fruits and vegetables (74%), eggs (58.4%) and meat (46.8%). The largest selection of organic products on the Polish market is in specialty stores, whose assortment contains not less than 51% of certified organic food. From year to year such food is increasingly available in major commercial networks, some of them even have own brands associated with organic food. Most organic food stores are located in the big agglomerations, but such stores start to appear also in the cities below 100 000 inhabitants.

Organic food is distributed via:

- commercial networks - about 4000 super-and hypermarkets a.o.: Carrefour, Lidl, Netto, Intermarche, Kaufland, Piotr & Paweł,
- franchise networks a.o.: Chata Polska (205 stores), the Freshmarket (560 stores),
- regular food stores, in which there are "organic islands",
- chemist's Rossmann (1169 stores),
- wholesale food Selgros Cash & Carry (17 stores),
- health food shops (about 800 stores),
- the specialist organic network shops a.o. Organic Farma Zdrowia S.A. (42 stationary stores),
- online health food stores (more than 200 stores),
- organic markets/Christmas markets with organic food a.o.: BioBazar, Jarmark Toruński, Wrocławski Bazar Smakoszy, Frymark bydgoski,
- food and agricultural shops and cooperatives a.o.: Lokalny Rolnik, od Rolnika,
- purchase directly from the local farmers,
- traditional bazaars, farmer markets, food stands with organic food during local events.

According to Euromonitor International [6] Polish market of organic bundled products is characterized by high growth dynamics in the years 2011-2016. By observing the distribution of organic products, one may notice that they are usually available at independent retailers, including specialty stores. The increasing share of organic food is reported for the modern channels, such as hypermarkets and very slow growing Internet sale (Fig. 1).

According to the study of IMAS International 2017 [15], 16% of tested respondents use the specialized online stores with organic food. Online stores allow to reach the organic certified products in the smaller towns where stationary specialist stores are less frequent.

According to the survey conducted on students [14], the main barriers why the consumers resign to buy organic food have been indicated as follows: too high prices - 66%, lack of availability (lack of commodities in the store) - 18%, difficulty to distinguish between organic and conventional food - 16%. Most of these restrictions are caused by the problems with distribution [22].

Organic food market is growing but even though organic food distribution network is growing, it is still not sufficient and not fully satisfying to consumers. The aim of the study was to assess and analyse the range of organic food sold by selected shopping centers in Warsaw and online stores, with the focus on Polish and foreign manufacturers.

Research hypothesis assumes that the range of organic food is disappointing, still lacking in many product groups. The range of the organic products is bigger in the online stores than in the stationary ones. Hypothetically it is expected that in Polish shops more products are of Polish than foreign origin.

Source / Źrodło: [6]

Fig. 1. The share of the organic food sale at various channels
Rys. 1. Udział różnych kanałów dystrybucji w sprzedaży żywności ekologicznej

2. Material and methods

The assortment of the stores containing mostly organic products has been studied. Two stationary stores located in Warsaw (BioBrain and PyszneEko) have been selected to study as well two online stores, due to the growing trend of the purchase by Internet (BioPlanete and BioSklep).

Each of these shops offers in addition to food organic natural cosmetics, dietary supplements, and household items. In this work the focus is only on the products from the food sector.

The range is divided into 29 different groups: puddings, jellies, shakes; for children and infants; ready meals, pastes, sauces; desserts, ice cream, desserts; mushrooms; tea; cocoa and substitutes, chocolate, carob; cereal, oatmeal, rice, sesame seeds, beans; coffee; creams, nut butters, chocolate, tahiti; pasta, couscous; flours and starches; meat, cold meats; honey and products thereof; dairy products; drinks, fruit juices; vinegar, oils, olive oil; nuts, chestnuts, almonds, seeds; candied fruit, freeze-dried, dehydrated, dried vegetables; bread, pastries; products processed from fruit and vegetables; spices and herbs; fish, seafood; sweets and snacks; sweeteners, sugars; legume; breakfast foods (muesli, flakes); wine; water.

Fresh fruits and vegetables are not included into the analysis, since they were present only in one stationary and one online store. This issue has been included into a discussion of the results.

3. Results

As a result of the analysis of the assortment of online stores - BioPlanete and BioSklep, and sationary stores - BioBrain and PyszneEko, it was found that most of products offered in these shops were foreign products.

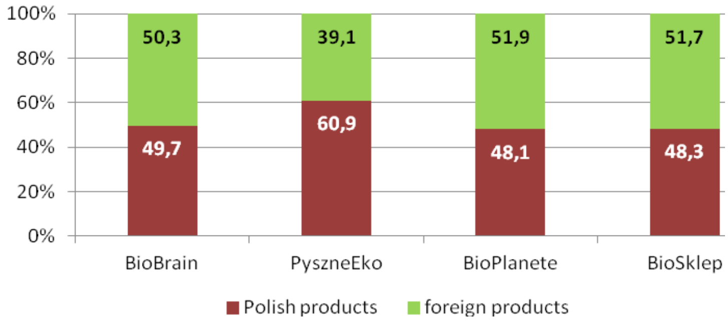
The highest share of Polish products has been offered by the stationary shop PyszneEko (60.9%). Other shops were at a similar level, however it is possible to notice a tendency that the online stores offer more foreign products. Most foreign products are offered by the shop BioPlanete (Fig. 2).

The Figs 3-5 present the assortment division due to the country of origin of the manufacturer in the studied stores.

In the store BioBrain 766 products coming from 86 different manufacturers have been found. As shown in Fig. 3, the assortment of this stationary store comes from 16 countries. Polish producers constitute 35%, and among the foreign countries we can see a significant prevalence of Germany (23%), Spain (8%) and the Netherlands (7%). The producers from Brazil, Greece, Mexico, Portugal, Sweden and Turkey belong to the least numerous – just one producer from each country.

In PyszneEko store we can find 749 products from 68 different manufacturers. As shown in Fig. 4, the assortment in this stationary store comes from 13 countries. Polish producers constitute 40%, and among the foreign countries we can see the important role of Germany (19%), Czech Republic (9%) and France (7%). Countries such as Bulgaria, Greece, Slovakia, Sri Lanka, Switzerland, Hungary, Italy, United Kingdom are poorly represented - only 1% of the assortment comes from these countries.

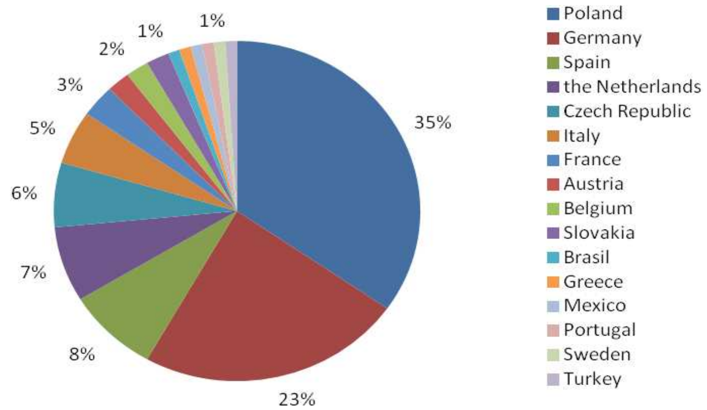
Fig. 5 illustrates a diversity of the producers supplying products to the online store BioPlanete. There are 151 manufacturers from 22 countries. In this number 37% (56) are Polish producers, and 24% (36) are German producers. The attention should be paid to the presence of individual manufacturers from 16 countries, including exotic, outside European countries like Mexico, New Zealand, Peru, Sri Lanka, Turkey, whose assortment constituted 1% in every case.



Source: own studies / Źrodło: opracowanie własne

Fig. 2. Division of the shops assortment due to the origin of the product [%]

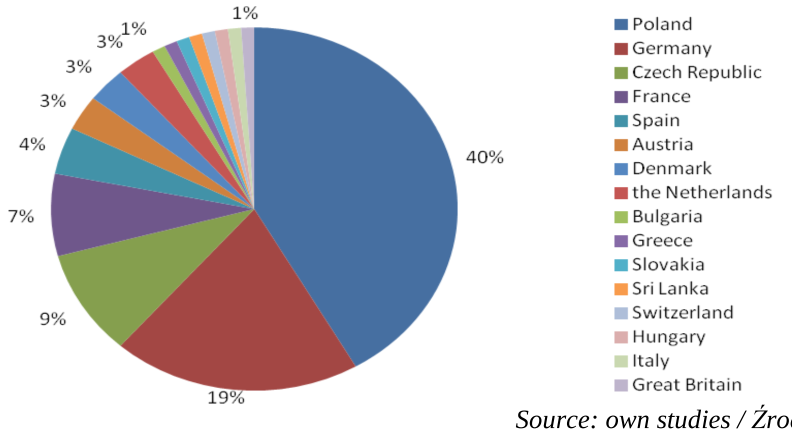
Rys. 2. Podział asortymentu sklepów ze względu na pochodzenie produktów [%]



Source: own studies / Źrodło: opracowanie własne

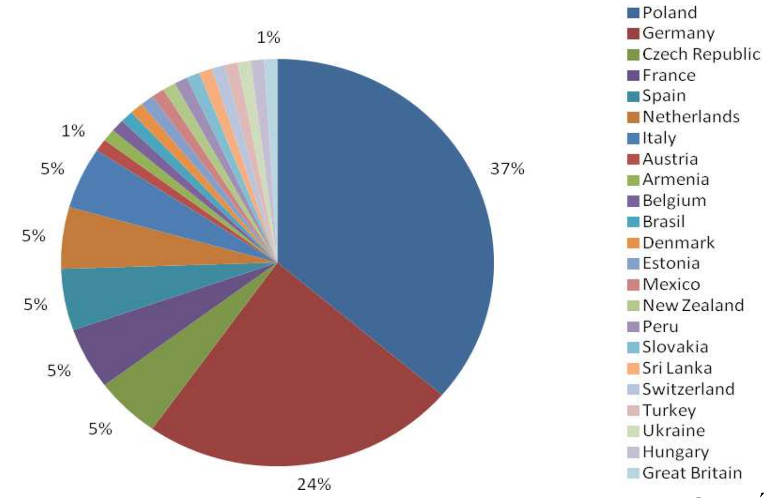
Fig. 3. Assortment of BioBrain store due to the country of origin of the manufacturer

Rys. 3. Asortyment sklepu BioBrain – podział ze względu na kraj pochodzenia producenta



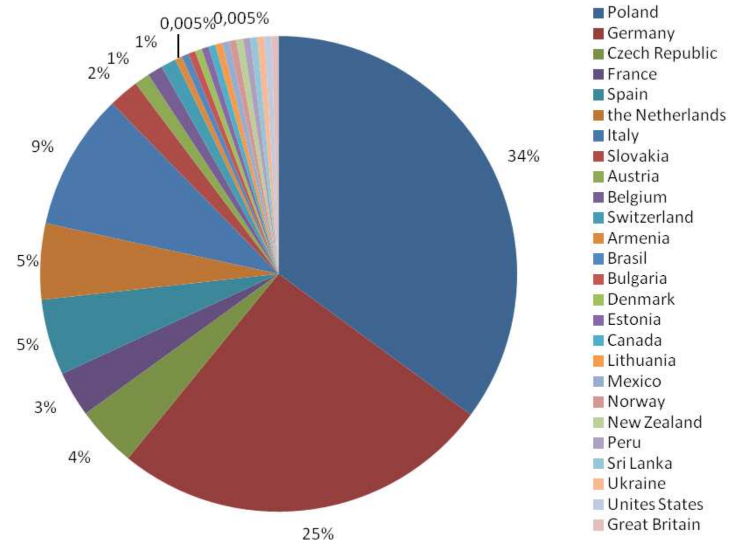
Source: own studies / Źrodło: opracowanie własne

Fig. 4. Assortment of PyszneEko store due to the country of origin of the manufacturer.
Rys. 4. Asortyment sklepu PyszneEko – podział ze względu na kraj pochodzenia producenta



Source: own studies / Źrodło: opracowanie własne

Fig. 5. Assortment of BioPlanete store due to the country of origin of the manufacturer
Rys. 5. Asortyment sklepu BioPlanete – podział ze względu na kraj pochodzenia producenta



Source: own studies / Źrodło: opracowanie własne

Fig. 6. Assortment of BioSklep store due to the country of origin of the manufacturer
Rys. 6. Asortyment sklepu BioSklep – podział ze względu na kraj pochodzenia producenta

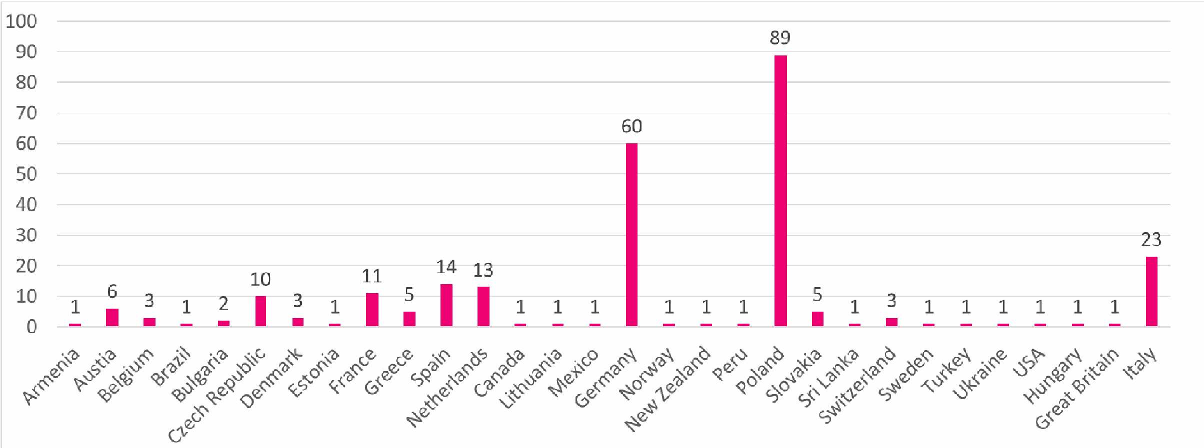
Fig. 6 presents the assortment available in the online store BioSklep. The store offers products from 217 different manufacturers from 26 countries, which is the largest diversity among the analysed stores. This time Polish companies constitute 34% (74), but as in previous cases, the second is Germany – 25 % (55) - every fourth product available in the store is German. Minimal assortment range is originated from the individual producers from Europe and countries outside Europe (0.005%): Lithuania, Mexico, Norway, New Zealand, Peru, Sri Lanka, Ukraine, United States, Great Britain.

Fig. 7 shows the list of the manufacturers due to the country of origin, being considered all analyzed trading places. The most producers are Polish - 89, and among foreign most come from Germany - 60, Italy - 23, Spain - 14, Netherlands - 13, France - 11, Czech Republic - 10.

Among the analyzed Polish food producers there were companies such as Symbio, Bionica, Natu, Biohurt, Victualia, Saluber, Tast, Natura, Vita Natura, Provita, Agro Natura, Myecolife, Smak Życia, Smak Natury, Dary Natury, Batom, Eko Wyspa and others.

Analysis of the available assortment of the studied stores showed its great diversity (Table 1). It is possible to see clear differences between the assortment of the stationary and online stores. Online stores offer definitely more product groups and more than double number of the products.

In the stationary stores several groups of products were lacking : meat, cold meats; honey and products thereof; fish and seafood; water and wine.



Source: own studies / Źrodło: opracowanie własne

Fig. 7. The numbers of organic food manufacturers distributing their products to all shops with the indication of the country of origin

Rys. 7. Liczby producentów ekologicznych dostarczających produkty do wszystkich sklepów z uwzględnieniem kraju pochodzenia

Table 1. Assortment of the stores with organic food considering the groups of products (number of products)

Tab. 1. Asortyment sklepów z żywnością ekologiczną z podziałem na grupy produktowe (liczby produktów)

Groups of products	**BioBrain** 766 products	**PyszneEko** 749 products	**BioPlanete** 2207 products	**BioSklep** 2808 products
	Stationary stores		Online stores	
Puddings, jellies, jellies, shake	7	8	16	17
For children and infants	20	48	110	137
Ready meals, pastes, sauces	53	13	129	262
Desserts, ice cream	6	2	4	12
Mushrooms	4	2	15	11
Teas	61	35	187	280
Cocoa and substitutes, chocolate, carob	2	8	23	36
Porridges, groats, rice, sesame seeds	70	58	84	137
Coffees	60	13	74	89
Creams, nut butters, chocolate, tahini	10	14	52	77
Pasta, cuscus	17	26	103	120
Flours and starches	36	32	55	86
Meat and cold meats			7	19
Honey and related products			37	41
Dairy products	10	2	8	47
Drinks, juices	38	116	234	308
Vinegars, oils, olive oils	16	25	103	115
Nuts, chestnuts, almonds, seeds	41	45	51	90
Candied, dehydrated and dried fruits, dehydrated vegetables	38	53	77	101
Bread, pastries	7	1	61	52
Products processed from fruit and vegetables	44	14	146	101
Spices and herbs	108	42	109	176
Fish, seafood		2	21	23
Sweets and snacks	82	129	341	288
Sweeteners, sugars	5	6	49	32
Legumes	5	16	29	51
Breakfast products (muesli, flakes)	25	39	56	97
Wine			25	1
Water	1		1	2

Source: own studies / Źrodło: opracowanie własne

In all stores water was the least diversified group of products. Moreover, many groups of products were not sufficiently represented (less than 1% of the offered assortment in the whole store): puddings, jellies, jellies, shake; desserts, ice cream, desserts; the fungus; cocoa and substitutes, chocolate, carob; dairy products; fish, seafood, breads and pastries. The most numerous groups of products were: sweets, snacks, drinks and juices. Online stores also offered a lot of different teas, while the stationary stores – many types of groats, porridges, rice, sesame seeds, grains, spices and herbs.

As mentioned in the chapter 'Material and methods', the analysis did not include fresh vegetables and fruits, because they appeared only in one stationary store (BioBrain) and one online store (BioPlanete). Among the shops offering fresh fruits and vegetables a bit greater assortment is offered by the store BioPlanete, however, it is only 3% of the whole assortment. In the store BioBrain this product group also accounted for a small proportion of the assortment and included primarily vegetables: potatoes, parsley, carrots, onions, chives and celery.

4. Discussion

According to the available data in Poland there are about 800 stationary stores and more than 200 online stores with organic food on the market, but there are also many other places distributing organic products [21]. Based on the analysis of selected shops it can be concluded that both the stationary and online shops provide a quite large spectrum of the products. In the stationary stores it is possible to get about 750 different foods, and in the online stores much larger quantities, because more than 2000 products [9]. To compare – in the years 2006-2007 almost 40% of the analyzed organic stores offered up to 100 products, and every fifth shop - since 101 to 200 products [12]. Analysis of the current assortment shows, however, that there are groups of products that are missing in the stores or the assortment in these stores is very limited Łuczka-Bakuła and Smoluk-Sikorska [12] indicate that 92.6% of the specialty shops offer imported organic articles, and 2/3 of these shops offer 21-60% of foreign products. In every 10th investigated store most (61-80%) of products were imported. In a study of Górski et al. [7] two of the studied stores contained accordingly 60% and 51% of foreign products, but in the third store the part of the foreign products was even 71%. In the presented study BioPlanete shop offered most of the imported products (52% of the assortment), the other stores offered less foreign products.

Most of Polish organic products has been offered by a shop PyszneEko (60,9%). Based on the presented research a tendency to more Polish products in stationary than online stores is noticeable. It is worth noting that online stores offer more products from exotic, more distant countries than stationary shops. BioSklep store offers products from manufacturers coming from 26 different countries, while the shop PyszneEko – only from 13 countries.

In the study of Górski et al. [7] organic products are mostly imported from Germany and Italy; other significant suppliers are: Czech Republic, the Netherlands, Switzerland, France. The present study also shows that most foreign products on the Polish market are of German origin (22.6%). A smaller but also significant part of organic products comes from such countries as Italy, Spain, the Netherlands, France and Czech Republic.

This trend observed in the presented work as well as in other Polish studies [7, 12] is not favorable while considering development of the organic products sale, because they are studies indicating that consumers strongly prefer to buy products derived from the domestic market than imported one [22].

Research of Brodzińska [3] carried out 8 years ago indicated that the stores were offering only few products of the short term of validity, such as milk, milk products, meat and sausages, while the richest product segment was represented by cereals and juices.

Górski et al. [7] examining 4 stores (Kombu Delikatesy, Organic Farma Zdrowia, Amarantus, EkoSpiżarnia) showed that cereal products were the largest group of foods. Other very rich groups were: teas, coffees and cocoas, as well as a group of products processed from fruits and vegetables including juices. The convenience foods created the least represented product group [7].

The presented study shows similar results. In the studied shops such categories as coffee, drinks and juices, groats, porridges, rice, sesame and seeds belong to the most represented product groups. It is however symptomatic that sweets and snacks create the biggest share of the offered products in all analyzed stores (on average 13.3% of the assortment). This phenomenon is not positive from the nutritional point of view, because it may lead to obesity even among children [13]. The well-constructed diet should contain only small part of sweets, and if they are so common in the organic shops there is a danger that the consumers will buy them too frequently.

Unfortunately, by comparing the results of this study to the previous research conducted 8 years ago [3] it can be stated that products with a short expiry date are still a problem for distributors. Although stationary stores contained a fairly large number of different products, no meat and cold cuts have been offered and dairy products were offered in very limited quantities. Interestingly, not the stationary but the online stores offered meat and cold meats despite the problems caused by distribution of such products. It should be noted however, that in all stores the offer of these products was very limited.

Similar problem found in the analyzed shops concerns the lack of fresh fruits and vegetables. This is surprising, especially in light of the fact that organic consumers declare the most common purchase of the products belonging to these groups. Considering the scientifically proven health advantages connected with the regular consumption of the well-constructed organic diet the presented shortcomings and deficiencies in the offer of organic shops should be perceived as adverse. It may point out that distributors are focused on the easier, more profitable food segments; for example shop PyszneEko has a wide range of products from a group of superfoods, nutritional supplements and dried fruits. It might indicate too strong attitude of trading companies towards financial profit with the omission of the producer and consumer interest.

5. Findings

1. Among the surveyed shops with organic food only in the shop PyszneEko the share of Polish producers exceeded half of the offered assortment (60.9%). In the other stores the share of national organic food companies is a bit less than half.

2. In all the surveyed stores only about 34-40% of the available assortment comes from the Polish producers. This

shows that particular domestic producers introduce relatively less products than particular foreign producers.
3. Most organic products are imported from Germany. Manufacturers from Italy, Spain, the Netherlands, France and the Czech Republic have a smaller but also significant share.
4. Basic groups of the assortment available in specialty stores are: drinks and juices and dry products such as teas, groats, porridges, rice, sesame and seeds. Special attention deserves the most numerous group of sweets and snacks.
In the tested stores with organic food some groups of food products are not offered or their assortment is very limited.
5. It concerns such product groups as meat, dairy products, mushrooms, wine, desserts, ice cream, additions to the desserts. The offer of fresh vegetables and fruits is almost completely missing.
6. The analyzed stationary shops are characterized by a lower diversity of food, fewer product numbers and more products from Polish producers than online stores.

6. Conclusions

1. Food producers should be encouraged to invest in the organic processing plants, and currently functioning Polish processors - to increase the range of the offered products.
2. Both the stationary stores and online shops should aim to increase the range of under-represented groups of products, increasing also the share of products from domestic manufacturers.
3. For many consumers the Internet sale may be a satisfactory alternative for the stationary stores and can constitute an increasingly significant system to buy the convenient foods.
4. Further development of the organic products market will not be possible without the continuous building of the consumer awareness about the high quality and nutritional value of organically produced food.

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