t. XXVIII, nr 6/2021 DOI 10.33226/1231-7853.2021.6.2

Mgr Kinga Cichocka
Szkoła Główna Gospodarstwa Wiejskiego w Warszawie
ORCID: 0000-0002-6948-8863
e-mail: kingaczartek@gmail.com

Dr inż. Dawid Olewnicki
Szkoła Główna Gospodarstwa Wiejskiego w Warszawie
ORCID: 0000-0002-3096-3882
e-mail: dawid_olewnicki@sggw.edu.pl

Poland's cut flower trade with other EU countries between 2004 and 2019

Polski handel zagraniczny kwiatami ciętymi z krajami Unii Europejskiej w latach 2004–2019

Abstract

The aim of this elaboration was to analyze the turnover and directions of Polish foreign trade in cut flowers in general, including carefully selected species of cut flowers, within European Union countries between the years 2004 and 2019. Poland's accession to the European Union opened the country up to new markets and contributed to the development of international trade, in particular to cooperation with other EU countries. Since 2004, the value of imported and exported cut flowers in Polish foreign trade has been growing, but the growth rate of imports is faster than exports.

Keywords
cut flowers, export, import, Poland, EU

Streszczenie

Celem artykułu jest analiza obrotów i kierunków polskiego handlu zagranicznego kwiatami ciętymi w ujęciu ogólnym, w tym wybranych grup kwiatów, w krajach Unii Europejskiej, w latach 2004–2019. Przystąpienie Polski do Unii Europejskiej otworzyło kraj na nowe rynki, co przyczyniło się do rozwoju handlu międzynarodowego, w szczególności do współpracy z innymi krajami UE. Od 2004 roku rośnie wartość importowanych i eksportowanych kwiatów ciętych, przy czym dynamika importu jest wyższa niż eksportu.

Słowa kluczowe
kwiaty cięte, eksport, import, Polska, EU

JEL: F10, F14, F15

Introduction

Ornamental plants have always accompanied humans for centuries, mostly being a source of aesthetic experiences (Huss, Yosef & Zaccai, 2018), making everyday life more pleasant and serving to express feelings of love, respect, gratitude, and homage. They accompany religious ceremonies (Jabłońska, 2009; Janes, 2011; Mazar, 2015) and secular people and are offered to other people on various occasions (Palma et al., 2011; Lai, 2013). For many years an increase in demand for this type of product has been observed all over the world (Yana Gan, 2012; Sudhagar & Phil, 2013). The turnover of international trade in ornamental plants is also increasing on a global scale (Sharma, Abrol & Baweja, 2019).

Modern foreign trade drives conditions of globalization (Kołodko, 2007) and intensifies the development of international economic cooperation (Jaszyński, 2016; Incekara & Savrul, 2017). In Poland, significant changes in foreign trade were related to systemic transformation, which resulted in the opening of borders and the development of trade and cooperation with other countries (Czarny & Śledziewska, 2009). Conditions for the growth of Polish exports and

imports (including agri-food products) were also created when Poland joined the European Union in 2004 (Ślusarczyk, 2009; Nacewska-Twardowska, 2014; Grzelak & Roszko-Wójtowicz, 2015). As a result of these changes, Poland's share of exports to the world increased from 0.44% in 1995 to 1.05% in 2008 (Jaszyński, 2016). Poland is a net importer of cut flowers and pot plants (Jabłońska, Olewnicki & Kowalczyk, 2015). As CBI Market Survey indicates (2009), in 2008 Polish floriculture market was based on imports in 30%. Apart from the change in the value of imports and exports, their direction has also changed. The importance of EU countries has increased at the expense of cooperation with former socialist countries (Marks-Bielska et al., 2015).

As Olewnicki (2011) points out, the contemporary nature of horticulture is influenced by the growing importance of production in southern European countries, as well as in economically developing countries, mainly in Asia, South America, and some European and African countries. Relatively cheap labour and low thermal energy inputs are the basic factors determining the highly competitive advantage of horticultural products from these countries. The development of production in the above-mentioned regions is often stimulated by Western European countries with sufficient capital, potentially ready to invest in relatively cheaper production and the development of modern production technologies, and above all logistics, enabling the international flow of goods from producer to consumer at a rapid pace.

European foreign trade in ornamental plants is characterized by the principle of geographical proximity. In the years 1999–2014, the share of the Member States in the EU import of ornamental plants increased by 67%, and in exports — by over 70% (Wróblewska et al., 2018).

For years, Poland has been a significant producer of ornamental plants in Europe, and cut flowers are one of the basic assortment groups that are of significant importance in the trade in floriculture products. However, official data available is very general and incomplete (Wróblewska, 2007; Olewnicki, 2015).

The aim of this article is to analyze the turnover and directions of Polish foreign trade in cut flowers in general, including carefully selected species of cut flowers, within European Union countries between the years 2004 and 2019.

The following research hypothesis was also formulated: Poland's accession to the EU structures made it possible to increase the sales value of Polish cut flowers on the European market.

Methodology and research material

Analyses of the turnover and directions of Polish foreign trade in cut flowers in total and selected species of cut flowers were carried out on the basis of Eurostat data. Particular groups were analyzed according to the CN codes of the Combined Nomenclature (Table 1). The analyses covered the years 2004–2019. Poland's accession to the European Union in the first year of the analyzed period made it possible to compare the changes taking place in foreign trade after Poland's accession to the EU. The general analyses show the turnover of goods exchanged in Poland — on a global scale, and specifically between Poland and other European Union countries. The following species of fresh cut flowers were selected for analysis: roses, carnations, orchids, chrysanthemums, and lilies. The basis for the selection of these species was the availability of data on the value of their turnover with EU countries. In the case of individual groups of plants, the analysis' period was correspondingly shorter due to the limited availability of data in the Eurostat database. The geographic directions of Polish foreign trade in cut flowers (in two sub-periods) were also analyzed in detail, indicating up to five of the largest trade partners within the European Union (EU-28) in terms of value of turnover.

The main method of determining and assessing the trends in Polish foreign trade of cut flowers was the trend function understood as a regression function occurring with respect to the time independent variable t. The dynamics of changes in the value of export and import, assuming the first year of the analyzed period as 100%, and also the coefficients of variation and the average annual rate of changes in trade turnover were analyzed. When calculating the chain index (based on a variable), the average annual rate of the changes being studied was determined, the measure of which in a given period ($t0$; $t1$) was the difference between the average chain index from this period and unity (Górczyński, 2004).

Dynamics of change in foreign trade in cut flowers in the case of Poland and the rest of the world

Total export of cut flowers from Poland began to develop significantly from the moment of Poland's accession to the European Union, and the main recipients of this assortment, apart from Russia, became primarily EU countries.

Table 1. List of analyzed groups of cut flowers according to the Combined Nomenclature

Combined Nomenclature code	Code coverage according to the Combined Nomenclature	Abbreviated group names used in the study	Availability of data in the Eurostat database (according to the planned research period)
0603 including selected:	Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared	Total cut flowers	2004–2019
0603 11	Cut roses and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh	Cut roses	2007–2019
0603 12	Cut carnations and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh	Cut carnations	2007–2019
0603 13	Cut orchids and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh	Cut orchids	2007–2019
0603 14	Cut chrysanthemums and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh	Cut chrysanthemums	2007–2019
0603 15	Cut lilacs (*Lilium spp.*) and flower buds of a species suitable for bouquets or for ornamental purposes, fresh	Cut lilies	2012–2019

Source: Own elaboration based on Eurostat data.

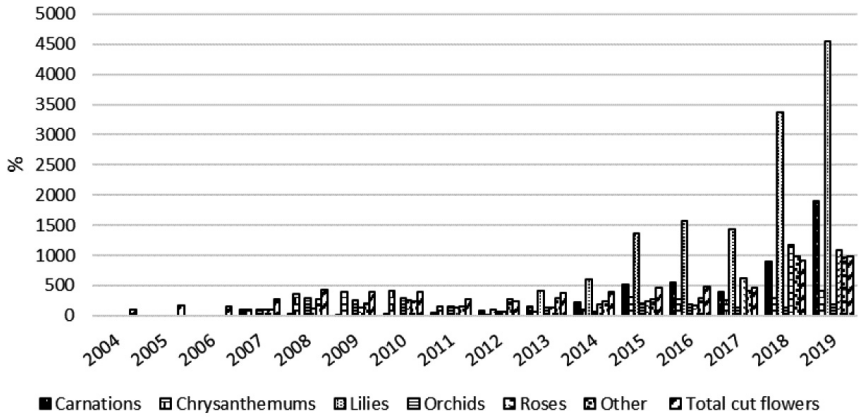
Between 2017 and 2019, approximately 3/4 of the total cut flower exports went to the markets of the European community, and 1/5 — to Russia. For comparison, between the years 2004 and 2007 it was 58.8% and 33.7%, respectively. The importance of other countries for the export of Polish cut flowers was insignificant. The situation of the import of cut flowers to Poland was slightly different. In this case, between the years 2004–2007 and 2017–2019 as much as 98.5% to 99% of the value of imported flowers came from other EU countries, where the majority was from the Netherlands. Apart from EU countries, the suppliers of the previously mentioned assortment having a smaller share were countries such as Ukraine, Turkey, Thailand, and also African countries.

In 2004, cut flowers worth approximately EUR 4.3 million were exported from Poland, while in 2019 this value was approximately EUR 42.3 million, so it was almost 10 times higher (Figure 1). The average annual increase in exports of this group between 2004 and 2019 was 15.4%. In the case of most groups of fresh cut flowers selected for analysis, data on the value of exports was only available commencing in 2007, and in the case of lilies — from 2012. Taking into account the dynamics of change in the export of fresh cut roses, which also belong to the most important product groups in this area, it should be noted that the value of their export in 2019 reached almost EUR 12.6 million and was over 10 times higher than in 2007. The average annual increase in the value of exports was over 20%. The second important group of cut flowers (available in Eurostat databases) in terms of turnover value are chrysanthemums. In 2019, cut flowers from this group were exported from Poland, to the value of almost EUR 4 million, while in 2007 this value was about EUR 950 thousand.

Among the analyzed groups, a very dynamic increase in the export of lilies within the analyzed period should be noted. Although in terms of absolute values they are not of great importance (in 2019 cut flowers from this group were exported from Poland, worth only EUR 734 thousand), compared to the first year analyzed (2012), this value was as much as 45 times higher, and the average annual increase in the value of export in the discussed years was 61.2%. This may indicate a clear increase in interest in this assortment on world markets, which should be considered a positive phenomenon from the point of view of Polish producers.

When analyzing the import of cut flowers, the dynamics of change were lower than in the case of

Figure 1. Dynamics of export value of cut flowers and selected species of fresh cut flowers from Poland in the years 2004–2019 (%)



Source: Own elaboration based on Eurostat data.

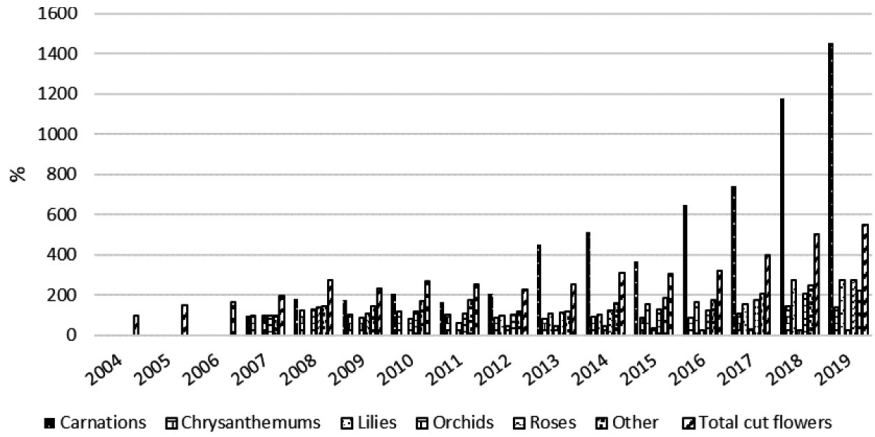
export. However, it should be clearly emphasized that Poland has been a net importer of cut flowers for many years (Olewnicki & Jabłońska, 2018), and the value of imports in recent years has exceeded the value of export in this assortment group by almost 4 times. In 2019, cut flowers in total worth over EUR 163 million were imported into Poland. Compared to 2004, it was over 5 times more (Figure 2). The average annual growth rate in 2004–2019 was 11.2%. As in the case of export, also in terms of import, fresh cut roses are the most important group of cut flowers. During the final year of analysis, cut roses were imported into Poland to the value of almost EUR 84.8 million, which at the same time accounted for over 52% of the total value of cut imported flowers. In relation to 2007, the value of imports was higher by 176.8%, and over the entire analyzed period it increased annually on average by 8.1%. Carnations are also an important group of imported cut flowers. The value of their import in 2019 was EUR 24.1 million; in relation to 2007, this value was almost 15 times higher. This may indicate an increase in interest and demand for this group of plants in Poland during the discussed period.

It should be emphasized that in import of cut orchids a significant decrease in its value was noted. In 2019, the value of import of this assortment group to Poland was only EUR 871.0 thousand, while in 2012 cut orchids with a total value of EUR 3.7 million were imported.

Value of turnover and directions of foreign cut flower trade in the case of Poland and other EU countries

Taking into account foreign trade turnover in the case of Poland and other EU countries, it should be noted that there was a very large increase in the value of total cut flower exports

Figure 2. Dynamics of import value of cut flowers and selected species of fresh cut flowers to Poland from other EU counties in the years 2004–2019 (in %)



Source: Own elaboration based on Eurostat data.

Table 2. Directions and structure of Polish foreign trade in total cut flowers in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	Germany	7 310,5	79,5	Germany	13 154,7	51,5	The Netherlands	64 939,5	93,9	The Netherlands	134 453,1	94,5
2	Czech Republic	740,4	8,1	Austria	3 296,8	12,9	Germany	3 274,4	4,7	Denmark	1 826,4	1,3
3	Denmark	559,3	6,1	The Netherlands*	3 220,6	12,6	Italy	577,9	0,8	Germany	1 469,1	1,0
4	Norway	309,2	3,4	Czech Republic	2 110,7	8,3	Great Britain	166,7	0,2	Finland	1 194,6	0,8
5	The Netherlands	200,8	2,2	Slovenia	1 964,4	7,7	Czech Republic	118,0	0,2	Spain	1 142,2	0,8
6	Other	76,3	0,8	Other	1 809,2	7,1	Other	108,9	0,2	Other	2 172,3	1,5
	EU	9 196,6	100,0	EU	25 556,5	100,0	EU	69 185,5	100,0	EU	142 257,7	100,0

Source: Own elaboration based on Eurostat data.

between the years 2007–2009 and 2017–2019. In the second mentioned sub-period, the value of Polish export of cut flowers to other EU markets in total was over EUR 25.5 million, while over the years 2004–2007 it did not exceed EUR 9.2 million.

The analysis carried out on the overall direction of the export of cut flowers to other EU countries from Poland shows that for many years Germany has been the largest recipient of the discussed assortment from Poland. In 2017–2019, more than 50% of the value of Polish export went to this market, and the average annual value was over EUR 13 million. Although during the years 2007–2009 Germany's share of cut flowers from Poland was as much as 80% (as it was the main recipient), its value was much lower than in the last sub-period analyzed and amounted to an average of about EUR 7.3 million. Between 2017 and 2019, Austria and the Netherlands closely followed Germany. Cut flowers from Poland were exported to each of these countries, with an average annual value of over EUR 3.2 million. However, when it comes to import, then in this case the dominant supplier of cut flowers to Poland over the entire period analyzed was the Netherlands. During both periods 2007–2009 and 2017–2019, the value of imported cut flowers from this country accounted for over 93% of the total import of the assortment into Poland. However, it should be added that in absolute values, during the analyzed sub-periods there was an increase in the value of imports from EUR 64.9 million to almost EUR 134.5 million. Other suppliers of cut flowers to Poland, although with a smaller share, may include Denmark and Germany. In the last analyzed sub-period, the share of these countries together accounted for only 2.3% of the total value of imports (Table 2).

The great importance of Germany as a recipient of cut flowers from Poland results from the high volume of exported fresh cut roses. Over the period 2017–2019, more than 1/3 of the value of roses exported from Poland to the EU went to this country. Although this share decreased significantly (compared to the period 2007–2009), cut roses worth over EUR 3.3 million were exported to Germany in absolute annual values. Important trade partners for Poland during the last analyzed sub-period were also the Czech Republic, Austria, Slovenia, and Romania. Cut roses worth almost EUR 3.5 million were exported to the first two countries mentioned between 2017 and 2019, which resulted in 36% of the value of Polish rose exports to the EU market. As in the case of cut flowers in general, also in the case of cut roses imported from EU countries to Poland, in both analyzed periods the Netherlands was of the greatest importance.

Over the years 2017–2019, cut roses with a value of EUR 64.7 million were imported from this country, which made 96.8% of the value of the entire import of these flowers from EU countries. Other trading partners include Denmark, Spain, Italy, and even Germany, but the share of these countries was small and did not exceed 3% in total (Table 3).

Although the demand for carnations as cut flowers in Poland was particularly high in the period of the centrally planned economy, in recent decades there has been an obvious increase in the interest of Polish consumers in this species (Jabłońska, 2009). Between 2007–2009 and 2017–2019, the value of their imports to Poland increased from approximately EUR 2.5 million to over EUR 18 million. Also, in this case, the largest supplier to the Polish market was the Netherlands with an 89.5% share between 2017 and 2019. It should also be noted that 6.3% of the value of imported carnations to the Polish market from EU countries came from Finland.

Despite the fact that during the years 2017–2019 a ten times higher value of cut carnations was exported from Poland than in 2007–2009, the export in the case of this species is not of great importance. In the last analyzed sub-period, the value of carnation exports to Poland did not exceed EUR 0.5 million (Table 4).

For many countries around the world, chrysanthemums are among the most popular ornamental plants. They have an important role among societies of the Far East, where they have been revered for centuries as a symbol of longevity. In Europe, this plant species also occupies the leading positions among ornamental plants (Jabłońska, 2007; Jabłońska & Sobczak, 2011). Poland is also one of the major producers of chrysanthemums, but with a specific character (as potted flowers) resulting from the strong tradition of celebrating All Saints' Day on November 1st and All Souls' Day on November the 2nd. Due to the fact that production is directed mainly to the domestic market, the export of cut chrysanthemums does not have any significant role in Poland. During the years 2017–2019, its value was only EUR 551.1 thousand, 63.7% of which went to the German market. The situation is completely different with the import of chrysanthemums. During the years 2007–2009 and 2017–2019, plants from this group were imported with an average value of EUR 10.3 million to EUR 12.6 million. The main supplier of this species to the domestic market in both 2007–2009 and 2017–2019 was the Netherlands, and the country's share of this market exceeded 98% in both of the sub-periods analyzed (Table 5).

Table 3. Directions and structure of Polish foreign trade in fresh cut roses in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	Germany	120,3	58,7	Germany	3 330	34,4	The Netherlands	33 810,6	95	The Netherlands	64 733,2	96,8
2	Italy	66,9	32,7	Czech Republic	1 756	18,1	Germany	1 519,1	4	Denmark	1 125,9	1,7
3	Czech Republic	15,5	7,6	Austria	1 735	17,9	Denmark	32,8	0	Spain	439,8	0,7
4	The Netherlands	2,1	1,0	Slovenia	1 150	11,9	Czech Republic	19,3	0	Germany	280,4	0,4
5	Denmark	0,1	0,1	Romania	1 091	11,3	Great Britain	14,0	0	Italy	101,2	0,2
6	Other	0,0	0,0	Other	620	6,4	Other	8,0	0	Other	162,2	0,2
	EU	204,9	100,0	EU	9 682	100,0	EU	35 403,9	100	EU	66 842,6	100,0

Source: Own elaboration based on Eurostat data.

t. XXVIII, nr 6/2021 DOI 10.33226/1231-7853.2021.6.2

Table 4. Directions and structure of Polish foreign trade in fresh cut carnations in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	Czech Republic	2,7	62,2	Germany	274,9	61,6	The Netherlands	1 662,8	67,9	The Netherlands	16 204,3	89,5
2	Germany	0,7	16,0	Czech Republic	61,7	13,8	Italy	343,7	14,0	Finland	1 131,9	6,3
3	Italy	0,6	13,4	Austria	59,0	13,2	Germany	254,0	10,4	Spain	359,7	2,0
4	The Netherlands	0,4	8,4	Slovenia	31,7	7,1	Great Britain	128,0	5,2	Germany	230,8	1,3
5	–	–	–	Slovakia	18,2	4,1	Czech Republic	49,5	2,0	Denmark	86,1	0,5
6	Other	0,0	0,0	Other	0,6	0,1	Other	10,7	0,4	Other	87,9	0,5
7	EU	4,1	100,0	EU	446,1	100,0	EU	2448,7	100,0	EU	18100,6	100,0

Source: Own elaboration based on Eurostat data.

Table 5. Directions and structure of Polish foreign trade in fresh cut chrysanthemums in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	Czech Republic	17,9	25,0	Germany	351,1	63,7	The Netherlands	10 302,3	99,6	The Netherlands	12 371,4	98,1
2	Italy	16,9	23,7	Austria	134,5	24,4	Germany	31,3	0,3	Denmark	119,4	0,9
3	Lithuania	12,8	18,0	Slovenia	58,8	10,7	Lithuania	7,8	0,1	Germany	80,1	0,6
4	Germany	12,4	17,4	Lithuania	3,2	0,6	Italy	1,3	0,0	Italy	20,9	0,2
5	The Netherlands	11,2	15,7	Czech Republic	2,7	0,5	Czech Republic	0,4	0,0	Great Britain	8,6	0,1
6	Other	0,1	0,2	Other	0,9	0,2	Other	0,1	0,0	Other	7,2	0,1
	EU	71,3	100,0	EU-28	551,1	100,0	EU	10 343,3	100,0	EU-28	12 607,5	100,0

Source: Own elaboration based on Eurostat data.

Table 6. Directions and structure of Polish foreign trade in fresh cut lilies in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	–	–	–	Germany	208,5	70,1	The Netherlands	307,7	98,5	The Netherlands	593,0	83,3
2 –		–	–	Austria	54,7	18,4	Germany	4,4	1,4	Denmark	100,7	14,1
3 –		–	–	Slovenia	22,4	7,5	Italy	0,1	0,0	Belgium	8,0	1,1
4 –		–	–	Czech Republic	8,4	2,8	Great Britain	0,0	0,0	Italy	5,6	0,8
5 –		–	–	Slovakia	3,5	1,2	–	–	–	Great Britain	3,0	0,4
6 –		–	–	Other	0,0	0,0	Other	0,0	0,0	Other	1,9	0,3
	EU	–	–	EU-28	297,4	100,0	EU	312,3	100,0	EU-28	712,2	100,0

In the first years of reporting the sales of cut lilies there were no exports to EU countries. In 2012–2014 Poland sold this species only to Russia and Belarus (EUR 180.9 K).
Source: Own elaboration based on Eurostat data.

Table 7. Directions and structure of Polish foreign trade in fresh cut orchids in 2007–2009 and 2017–2019

No.	Export						Import					
	2007–2009			2017–2019			2007–2009			2017–2019		
	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %	business partner	average annual (in thous. of EUR)	share in %
1	Italy	2,5	83	Germany	13,0	80,4	The Netherlands	3 256,1	98,2	The Netherlands	747,9	99,2
2	Czech Republic	0,5	17	Austria	1,8	11,2	Germany	38,9	1,2	Czech Republic	3,9	0,5
3	–	–	–	Czech Republic	1,0	6,4	Czech Republic	20,2	0,6	Italy	1,8	0,2
4	–	–	–	Slovakia	0,3	1,8	Luxembourg	0,7	0,0	Great Britain	0,3	0,0
5	–	–	–	Latvia	0,0	0,2	Malta	0,5	0,0	–	–	–
6	Other	0,0	0	Other	0,0	0,0	Other	0,9	0,0	Other	0,0	0,0
	EU	3,0	100	EU-28	16,1	100,0	EU	3 317,3	100,0	EU-28	753,9	100,0

Source: Own elaboration based on Eurostat data.

Over the years 2012–2014, no export of lilies from Poland to the EU market was recorded. However, taking into account the years 2017–2019, it should be noted that over 70% of the value of exports (EUR 208.5 thousand) went to Germany. Austria and Slovenia were followed by 18.4% and 7.5% of the value of the entire Polish export of this assortment to the European market, respectively.

Similarly to other discussed species of cut flowers, imported cut lilies from the EU come mainly from the Netherlands, and the value of imports from this country has clearly increased in a relatively short period of time. In the years 2012–2014, lilies with a value of EUR 307.7 thousand were imported from this country, while in 2017–2019 this value amounted to an average of EUR 593.0 thousand. The second important supplier of lilies to the Polish market was Denmark, with a 14.1% share in the value of imports during 2017–2019 (Table 6).

While in the case of most of the analyzed groups of cut flowers a significant increase in the value of imports was observed between the analyzed sub-periods, in the case of cut orchids, as already mentioned, this value has clearly decreased. The main supplier in both sub-periods was also the Netherlands. It is difficult to clearly indicate the cause of the downward trend in the import of orchids, which was sustained for many years, as previously indicated by Jabłońska and Olewnicki (2013). This requires separate and detailed analyses beyond the scope of this study. The export of the discussed group of cut flowers does not play a significant role for Poland, although it should be noted that it increased from EUR 3 thousand to EUR 16.1 thousand between the analyzed sub-periods of time. As in the case of other flower groups, the main recipient of orchids from Poland was Germany (Table 7).

Conclusions

Poland's accession to the European Union opened the country up to new markets and contributed to the development of international trade, in particular to cooperation with other EU countries. Since 2004, the value of exported and imported cut flowers in Polish foreign trade has been growing. Therefore, one can accept the research hypothesis. However, the growth rate of imports is faster than that of exports, which results in a constantly deepening negative balance in Polish foreign trade in cut flowers. Therefore, Poland is a growing net importer of this product.

From the point of view of Polish producers, Germany has been the most important European direction in the export of cut flowers for years. Between 2017 and 2019, more than 50% of the value of Polish exports to the EU-28 countries went to this market, and the average annual value was over EUR 13 million. Most of the assortment groups analyzed, such as roses, carnations, chrysanthemums, etc., were also directed to this country. In recent years, the import of individual product groups has even exceeded 99%.

Polish producers of cut flowers should therefore undertake activities aimed at changes in the structure of production in favour of the assortment of higher value and improve its quality in order to obtain higher prices on foreign markets. However, competition in the European market is high, which in the future will certainly have a negative impact on the domestic production of cut flowers, and then on the volume of their exports.

References/Bibliografia

CBI Market Survey (2009). *The Cut Flowers market in Poland*. www.cbi.eu/marketinfo

Czarny, E. & Śledziewska, K. (2009). *Polska w handlu światowym*. Warszawa: PWE.

Górczyński, J. (2004). *Podstawy ekonometrii*. Sochaczew: Wydawnictwo Wyższej Szkoły Zarządzania i Marketingu.

Grzelak M. M. & Roszko-Wójtowicz, E. (2015). Development of Polish Foreign Trade in Agrifood Products After Poland's Accession to the EU. *Oeconomia*, *14*(4), 37–48.

Huss, E., Yosef, K. B. & Zaccai, M. (2018). Humans' Relationship to Flowers as an Example of the Multiple Components of Embodied Aesthetics. *MDPI behavioral sciences*. https://www.mdpi.com/2076–328X/8/3/32/htm (09.06.2021). https://doi.org/10.3390/bs8030032https://doi.org/10.3390/bs8030032

Incekara, A. & Savrul, M. (2017). *The effect of globalization on foreign trade and investment in Eurasian countries. Eurasian economies in transition* (24–37). Newcastle upon Tyne, UK: Cambridge Scholars Publishing.

Jabłońska, L. (2007). *Ekonomiczne aspekty rozwoju sektora kwiaciarskiego w Polsce*. Warszawa: Wydawnictwo SGGW.

Jabłońska, L. (2009). Świątynie katolickie jako miejsce tworzenia się popytu na rośliny ozdobne. *Zagadnienia Ekonomiki Rolnej*, *4*, 99–110.

Jabłońska, L. & Olewnicki, D. (2013). Długookresowe zmiany w polskim imporcie i eksporcie kwiatów ciętych. *Roczniki Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich*, *100*(1), 197–210.

Jabłońska, L. & Sobczak, W. (2011). Rynek chryzantem w Polsce w okresie Święta Wszystkich Świętych. *Roczniki Nauk Rolniczych seria G — Ekonomika Rolnictwa*, *98*(4), 66–76.

Janes, D. (2011). 'The Catholic Florist': flowers and deviance in the mid-nineteenth century Church of England. *Visual Culture in Britain*, *12*, 77–96. https://doi.org/10.1080/14714787.2011.541138https://doi.org/10.1080/14714787.2011.541138

Jaszyński, M. (2016). Znaczenie handlu zagranicznego w rozwoju gospodarczym. *Zeszyty Naukowe PWSZ w Płocku. Nauki Ekonomiczne*, *XXIII*.

Kołodko, G. W. (2007). *Polska z globalizacją w tle. Instytucjonalne i polityczne aspekty rozwoju gospodarczego*. Toruń: Towarzystwo Naukowe Organizacji i Kierownictwa „Dom Organizatora".

Lai Yen-Chun, Huang Li-Chun (2013). The effect of relationship characteristics on buying fresh flowers as romantic Valentine's Day gifts. *HortTechnology*, *23*(1), 28–37. https://doi.org/10.21273/HORTTECH.23.1.28

Marks-Bielska, R., Lizińska, W. & Serocka, I. (2015). Polski handel zagraniczny produktami rolno-spożywczymi i jego przewaga komparatywna w latach 2008–2013. *Journal of Agribusiness and Rural Development*, *4*(38),757–767.

Mazar, P. (2015). *To crown the year: Decorating the Church through the seasons*. Archdiocese of Chicago: Liturgy Training Publications. Second Edition. USA.

Nacewska-Twardowska, A. (2014). Zmiany w wymianie handlowej Polski produktami rolno-spożywczymi z krajami pozaunijnymi. *Zeszyty Naukowe SGGW Problemy Rolnictwa Światowego*, *14*(2), 139–148.

Olewnicki, D. (2011). *Przemiany w gospodarce ogrodniczej w Polsce w latach 1965–2008 oraz perspektywy jej rozwoju*. Praca doktorska. Warszawa: SGGW.

Olewnicki, D. (2015). Zmiany w szkółkarstwie ozdobnym w ujęciu ogólnopolskim i wojewódzkim. *Europa Regionum*, *22*, 171–182. https://doi.org/10.18276/er.2015.22-13

Olewnicki, D. & Jabłońska, L. (2018). Polski handel zagraniczny produktami kwiaciarskimi. *Zeszyty Naukowe SGGW Problemy Rolnictwa Światowego*, *18*(33), 176–182. https://doi.org/10.22630/PRS.2018.18.1.16

Palma M., Hall, C. R. & Collart, A. J. (2011). Repeat buying behavior for ornamental plants: a consumer profile. *Journal of Food Distribution Research*, *42*(2), 67–77.

Sharma, P., Abrol, A. & Baweja, H. S. (2019). *Floriculture world-wide production, trade, consumption pattern, market opportunities and challenges*. https://www.researchgate.net/publication/332961861_Mar_2_23_min_read_FLORICULTURE-WORLD_WIDE_PRODUCTION_TRADE_CONSUMPTION_PATTERN_MARKET_OPPORTUNITIES_AND_CHALLENGES (09.06.2021)

Sudhagar, S. & Phil, M. (2013). Production and marketing of cut flower (Rose and Gerbera) in Hosur Taluk. *International Journal of Business and Management Invention*, *2*(5), 15–25.

Ślusarczyk, B. (2009). Konkurencyjność polskich wyrobów rolno-spożywczych na rynkach krajów UE, a zwłaszcza na rynku niemieckim. *Roczniki Naukowe SERiA*, *11*(3), 361–365.

Wróblewska, W. (2007). *Rynek materiału wyjściowego ozdobnych roślin cebulowych w Polsce i Holandii*. Praca doktorska. Akademia Rolnicza w Lublinie.

Wróblewska, W., Kopiński, Ł., Paszko, D. & Pawlak, J. (2018). Unijny eksport i import roślin ozdobnych — zmiany w ujęciu rodzajowym i geograficznym. Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie. *Problemy Rolnictwa Światowego*, *18*(1). https://doi.org/10.22630/PRS.2018.18.1.29

Yana Gan (2012). Flower industry thriving, despite economic crisis. *FloraCulture International*. *January*, 8–9.

Mgr Kinga Cichocka

Master of Finance and Accounting. PhD student at the Section of Horticulture Economics, Institute of Horticulture, Warsaw University of Life Sciences. Specializing in the analysis of the floriculture sector. Her main interests are financial analysis of enterprises, market analysis.

Dr inż. Dawid Olewnicki

PhD in agricultural sciences, specializing in economics and organization of horticulture. Head of the Laboratory of Horticulture Organization and Economics at the Institute of Horticulture at the Warsaw University of Life Sciences. He lectures at full-time and part-time studies in such subjects as: Economics and organization of horticultural production, Horticulture market, Logistics in horticulture. Author and co-author of over 70 articles on economic issues in horticulture. For years, he has also been associated with the practice of horticulture. A special place in this respect is the production and trade of ornamental plants, as well as the cultivation of grapevines and the dissemination of the culture and tradition of the grapevine.

Mgr Kinga Cichocka

Magister finansów i rachunkowości. Doktorantka w Pracowni Organizacji i Ekonomiki Ogrodnictwa Instytutu Nauk Ogrodniczych Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie. Specjalizuje się w analizie sektora kwiaciarskiego. Jej główne zainteresowania to analiza finansowa przedsiębiorstw, analiza rynkowa.

Dr inż. Dawid Olewnicki

Doktor nauk rolniczych, specjalność ekonomika i organizacja ogrodnictwa. Kierownik Pracowni Organizacji i Ekonomiki Ogrodnictwa w Instytucie Nauk Ogrodniczych Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie. Prowadzi zajęcia na studiach stacjonarnych i niestacjonarnych m.in. z takich przedmiotów jak: Ekonomika i organizacja produkcji ogrodniczej, Rynek ogrodniczy, Logistyka w ogrodnictwie. Autor i współautor ponad 70 artykułów dotyczących ekonomicznych zagadnień w ogrodnictwie. Od lat związany również z praktyką ogrodniczą. Szczególne miejsce w tym zakresie stanowi produkcja i handel roślinami ozdobnymi, a także uprawa winorośli i upowszechnienie kultury oraz tradycji winoroślarskiej.