ANNALS OF THE POLISH ASSOCIATION OF AGRICULTURAL AND AGRIBUSINESS ECONOMISTS

received: 26.09.2019
acceptance: 25.11.2019
published: 15.12.2019

Annals PAAAE • 2019 • Vol. XXI • No. (4)

JEL codes: Q18, Q21, Q28

DOI: 10.5604/01.3001.0013.5959

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SOFT FRUIT PAYMENT AS AN INSTRUMENT OF THE EU'S COMMON AGRICULTURAL POLICY AND CHANGES IN PRODUCTION AND PURCHASE PRICES OF RASPBERRIES AND STRAWBERRIES IN POLAND

Key words: Common Agricultural Policy, soft fruit subsidies, area of raspberry and strawberry plantations, raspberry purchase prices, strawberry purchase prices

ABSTRACT. The article presents the instruments of the EU's Common Agricultural Policy for the fruit and vegetable market. It provides a detailed analysis of the mechanism of support for soft fruit producers, which was introduced in Poland in 2008. Changes in the area of plantations of raspberries and strawberries, the yield of these fruits and the variability of purchase prices for processing were examined in two periods: 2008-2014 and an equal period before the introduction of this instrument (2001-2007). The index of changes and coefficient of variation were calculated to determine changes in the traits under analysis. The significance of differences in the mean values of the analysed parameters (area, yield, prices) in selected periods was determined by means of the test of significance of differences for dependent samples. Analysis showed that the area of plantations, yield and average purchase prices of raspberries had increased significantly ($p < 0.05$). There were minimal changes in the plantation area and yield of strawberries. The average purchase prices of strawberries increased, but these changes were not statistically significant. The coefficients of variation in the purchase prices of strawberries and raspberries for processing decreased after the introduction of soft fruit subsidies (2008-2014), in comparison with the period before the introduction of the payments, indicating a stabilisation of prices. However, it is not possible to make a clear association between the introduction of soft fruit subsidies and the stabilisation of purchase prices of strawberries and raspberries for processing.

INTRODUCTION

The Common Agricultural Policy (CAP) was the first common socioeconomic policy established by the economic community of Western European countries after the end of World War II. Fruit and vegetables were among the first groups of products subject to regulations. The CAP was established in 1962. At the same time, the common market for six groups of agricultural products, i.e. cereal, pork, eggs, poultry meat, fruit and vegetables, and wine was created. The common organisation of the fresh fruit and vegetable market was established in 1972. The first regulations for this market consisted of the introduction of uniform quality standards, the maintenance of producer prices and income through the intervention purchase system (withdrawal of products from the market), the introduction of regulations concerning producer organisations and the application of a common customs tariff for trade with third countries, which was supplemented by a system of burdens to provide protection from imports [Nosecka 1997]. In 1996, the common organisation of the fruit and vegetable market was reformed. The system of the EU's CAP instruments for this market included the setting of mandatory quality standards for fruit and vegetable trade, the use of intervention purchase prices, the withdrawal of products from the market, and the assignment of the regulation of the supply and prices of fruit and vegetables on the domestic market to producer organisations. Apart from that, the EU's CAP instruments consisted of using non-price forms of support for producers, such as subsidies for orchard grubbing and renovation, credit assistance, tax breaks, export subsidies, import quotas, duties, minimum prices, entry prices, as well as setting guaranteed prices for producers and subsidising fruit and vegetable processing [Mierwiński, Smoleński 2008, p. 114-116].

In 2003, before Central and Eastern European countries were admitted to the EU, some instruments on the fruit and vegetable market had been withdrawn as a result of another reform of the CAP. When Poland joined the EU, the following mechanisms were available to fruit and vegetable producers: a support system for producer groups and organisations, an intervention mechanism consisting of the withdrawal of fresh fruit and vegetables from the market, common quality requirements concerning trade, support on the market of tomatoes for processing, export refunds as well as import licences and quotas [Gburczyk 2006, p. 57-61].

In 2007, a single common organisation of agricultural markets was established and the regulatory mechanisms for the 21 existing common market organisations were standardized. In 2008, the fruit and vegetable market was reformed. Producer organisations became entities responsible for market crisis management. The establishment of larger producer organisations was promoted with incentives. Environmental protection became the main focus. The rules of foreign trade (entry prices, duties, quotas) were maintained, but export refunds were abolished and support provided to the fruit and vegetable processing sector was separated from production [EC 2010]. Programmes promoting the consumption of fruit and vegetables were introduced and payments for soft fruits (strawberries and raspberries) were introduced as part of direct support systems [Kierczyńska 2012].

The 2013 CAP reform was the final stage of the CAP adjustment process. Decoupled aid was transformed into a multifunctional producer income support system, initiated in 2003. The tools of the single common market organisation, functioning as a 'safety net' and used only in the event of a price crisis and market disturbances, became consolidated. Currently, changes in the CAP, concerning the organisation of the market, are made to improve the regulations of the food supply chain and agricultural markets.

Due to the specific nature of agricultural markets, they are protected and require instruments that will support their efficient functioning. As Aneta Jarosz-Angowska [2017] reports, reference publications have provided a lot of evidence that when agriculture is confronted with the free market and does not receive any support, it becomes weaker and its backwardness increases. The European Union uses a wide range of instruments regulating the agricultural market as part of the CAP. The agricultural market is not homogeneous. It consists of a wide range of branch markets, including the fruit and vegetable market. According to Stanisław Szumski [2007, p. 114], the fruit and vegetable market is an example of a market with limited market intervention. The mechanism of support for soft fruit producers is an instrument of the Common Agricultural Policy dedicated to the fruit and vegetable market. The aim of the study was to assess changes in the growing area and yield of raspberries and strawberries as well as the variability of purchase prices of strawberries and raspberries for processing, in Poland, before and after the introduction of the soft fruit payment mechanism.

THE MECHANISM OF SOFT FRUIT SUBSIDIES IN POLAND

Thanks to the efforts of Polish branch organisations, payments for soft fruit plantations were introduced as an instrument of the Common Agricultural Policy. The causes and activities preceding the implementation of this instrument are presented in the previous article [Kierczyńska 2016]. In 2008, regulations concerning the growing of soft fruits for processing were introduced in some of the new EU member states (Bulgaria, Hungary, Lithuania, Latvia and Poland). Initially, these were transitional soft fruit payments granted to the strawberry and raspberry growing area, subject to a processing contract for either of these products. In Poland, the reference area to which payments could be granted amounted to 48,000 ha. Payments were introduced to improve the profitability of farms producing fruit for processing. The maximum support for producers was 400 Euro/ha and consisted of Community aid (230 Euro/ha) and complementary national aid (up to 170 Euro/ha).

In 2012, transitional soft fruit payment was replaced by a separate soft fruit payment. In order to receive this support, it was necessary to meet the single area payment criteria and submit an application. It was possible to receive a separate soft fruit payment to the strawberry or raspberry growing area for which the transitional soft fruit payment was granted in 2008. This payment was granted under the direct payment system until the end of 2014 [FAMMU-FAPA 2012, p.5].

In 2015, a new direct payment system was introduced in Poland. It includes payments for the soft fruit growing area as part of the system of payments granted for production. According to the Ministry of Agriculture and Rural Development [MRiRW 2015], the aim of payments granted for production was to support the sectors of particular economic, environmental or social significance, which were in a difficult situation. In Poland, one of them was the soft fruit sector (strawberries and raspberries). According to EU regulations, this payment was only supposed to encourage farmers to maintain current levels of production in these sectors. It was not necessary to sign a farming contract to receive a payment for the strawberry or raspberry cultivation area. Thus, it was possible not only to receive payments for the area where fruits were grown to be processed, but also for high-quality consumer fruits, including those intended for direct sale. Between 2015 and 2016, farmers were supported with payments for soft fruit (strawberries and raspberries). Since 2017, payments have been granted to farmers for growing strawberries. Changes in the direction and amounts of soft fruit payments were introduced in response to the reservations made by the European Commission [KRiRW 2018, p. 6].

Between 2008 and 2011, the number of applications submitted by producers of raspberries and strawberries for processing to receive soft fruit subsidies ranged from 35,000 (in 2008) to 56,000 (in 2011) [ARiMR 2009-2013]. As results from the data of the Central Statistical Office [GUS 2012, p. 74, 92], in 2010 it constituted 40% of producers with strawberry and raspberry plantations in Poland. Although during that period the total area of strawberry and raspberry plantations in Poland ranged from 74,000 to 81,000 ha, whereas the plantation area entitling producers to payments was 48,000 ha, during the first three years of the mechanism of soft fruit subsidisation, the area declared in the applications for payments was below 48,000 ha (Table 1). During the first three years after the introduction of the instrument, the share of the area declared in the applications for subsidies in the total area of raspberry and strawberry plantations in Poland was about 50%. The producers of strawberries and raspberries for processing did not fully take advantage of the possibility to receive subsidies because some of them may not have been adequately informed of this opportunity or had not signed a farming contract to supply raw materials for processing. In 2011, the share of the area declared in the applications for subsidies amounted to 71% of the total area of raspberry and strawberry plantations in Poland, which means that the fruits from these plantations were sent for processing. Between 2012 and 2014 payments were granted to so-called historical producers, who received subsidies in 2008 and were entitled to direct payments. According to the reports published by the Agency for Restructuring and Modernisation of Agriculture, the area covered by payments was nearly 30,000 ha.

Table 1. Area of strawberry and raspberry plantations in Poland and soft fruit payments in the years 2008-2018

Year	Area of strawberry plantations [1,000 ha]	Area of raspberry plantations [1,000 ha]	Total area of strawberry and raspberry plantations [1,000 ha]	Area declared in applications for soft fruit payments [1,000 ha]	Share of the area declared in the applications for subsidies [%]	Amount of total payment [PLN]	Amount of aid for 1 ha [PLN]
2008	54.16	19.97	74.13	33.07	45	42,225,270	1,358.68
2009	53.55	20.22	73.77	40.05	54	65,385,606	1,691.80
2010	51.73	29.60	81.33	47.46	58	73,188,450	1,593.87
2011	50.60	27.10	77.70	55.45	71	94,214,778	1,761.99
2012	50.60	28.40	79.00	29.18	37	78,237,698	2,670.66
2013	40.20	28.80	69.00	29.31	42	45,995,161	1,587.95
2014	52.90	28.30	81.20	29.21	36	45,600,182	1,569.76
2015	52.30	27.40	79.70	68.80	86	62,686,278	927.65
2016	50.78	29.28	80.06	71.95	90	63,847,956	904.78
2017	49.84	29.32	79.16	37.76	76*	41,325,535	1,118.75
2018	49.18	29.61	78.79	40.19	82*	27,706,912**	1,054.35

* since 2017 the growing of raspberries was no longer subsidised, ** 2018 – non-final data
Source: own calculation based on the Central Statistical Office (GUS) and Agency for Restructuring and Modernisation of Agriculture (ARiMR) data

The mechanism was changed in 2015 so that both the producers of strawberries and raspberries for processing as well as those offering products for the dessert fruit market were entitled to subsidies. Between 2015 and 2016, about 90% of the area of strawberry and raspberry plantations in Poland was covered by soft fruit payments. Between 2017 and 2018, when the growing of raspberries was no longer subsidised, payments were granted to about 80% of the area of strawberry plantations.

MATERIAL AND METHODS

The aim of the study was to assess changes in the growing area and yield of raspberries and strawberries as well as the variability of strawberry and raspberry purchase prices for processing in Poland after the introduction of the soft fruit payment mechanism. The changes in the growing area, yield of strawberries and raspberries and variability of purchase prices for processing during the period of transitional payments and separate soft fruit payments, i.e. between 2008 and 2014, were compared with an equal period before the introduction of this instrument, i.e. between 2001 and 2007.

Analysis was based on data from the Central Statistical Office (fruit yield, growing area) and the Institute of Agricultural and Food Economics (prices), published in the "Fruit and vegetable market. The current states and future prospects" – the market report of the Institute of Agricultural and Food Economics. The real value of raspberry and strawberry purchase prices was also presented – current (nominal) prices were adjusted by the inflation index (CPI index) [GUS 2019] to the level of those in 2000. Information on the areas declared for subsidies in the applications came from reports published by the Agency for Restructuring and Modernisation of Agriculture.

Changes in the growing area and yield of fruit were determined by means of the index of changes (changes in the average values of traits between the periods under analysis) and the variability of purchase prices was determined by means of the coefficient of variation (variability of the trait within the period under analysis). The significance of differences in the mean values of market parameters (area, yield, prices) during the periods under study was determined by means of the test of significance of differences for dependent samples. The normality of the distribution of variables was verified by means of the Shapiro-Wilk test. The t-test was used for variables with a normal distribution. If it was not possible to hypothesise that the distribution of the variables was normal, the Wilcoxon test was applied. The tests resulted in the probability (p) of an error associated with the hypothesis that there were significant differences between mean values [Stanisz 1998, p. 168]. The Statistica programme was used for calculations.

RESULTS

The average area of raspberry plantations in Poland was 26,000 ha in the period after the introduction of soft fruit payments and was 67% larger than the average area between 2001-2007. This difference was statistically significant at $p < 0.05$ (Table 2). During the period under analysis, the yield of raspberries became more than two times greater – it

Table 2. Changes in the growing area and yield of strawberries and raspberries after the introduction of the soft fruit payment mechanism in Poland

Item		Mean value		Index of changes [%]	Significance of differences in mean values (p)
		2001-2007 period I	2008-2014 period II		
Growing area [thous. ha]	raspberries	15.6	26.06	67	0.0180
	strawberries	51.87	50.53	-3	0.7353
Fruit yield [thous. t]	raspberries	51.97	106.89	106	0.0001
	strawberries	180.71	185.98	3	0.7204

Source: own calculation based on the Central Statistical Office (GUS) and the Institute of Agricultural and Food Economics (IERiGŻ) data

increased from an average of 52,000 tonnes, between 2001-2007, to an average of almost 107,000 tonnes when producers received soft fruit payments. The results of this analysis do not clearly indicate that soft fruit payments caused an increase in the area of raspberry plantations and a higher yield of these fruits in Poland. It is noteworthy that the production of raspberries in Poland was also developing before the period under analysis. According to the data of FAOSTAT [FAO 2019], both the area of raspberry plantations and the yield of this fruit have been increasing since 1965.

Between 2001 and 2007, the average area of strawberry plantations in Poland was 52,000 ha and it decreased by 3% after the introduction of soft fruit subsidies. Also, the yield of strawberries did not change significantly. Between 2008 and 2014, the average volume of production of these fruits amounted to 186,000 tonnes and was only 3% greater than during the period before the introduction of payments. These changes were not statistically significant at $p < 0.05$.

Between 2008 and 2014, the average purchase prices of raspberries and strawberries for processing increased and were higher than between 2001 and 2007 (Table 3). After the introduction of soft fruit payments, the average current purchase price of raspberries for processing was 3.57 PLN/kg and was higher than in the previous period. The increase in raspberry current prices was statistically significant at $p < 0.05$. Between 2008 and 2014, the coefficient of variation in the purchase prices of raspberries decreased and this may indicate that the prices of these fruits stabilised after the introduction of soft fruit payments.

After the introduction of subsidies, the average purchase prices of strawberries for processing were: 3.04 PLN/kg (strawberries without pedicels for freezing) and 2.04 PLN/kg (strawberries with pedicels for juice concentrate). They were higher than the average purchase prices of strawberries for processing before the introduction of payments. However, the differences in the average purchase prices of strawberries in the periods under analysis were not statistically significant at $p < 0.05$. The coefficient of variation of the purchase prices of strawberries for processing decreased after the introduction of payments. The variation in the purchase prices of strawberries for freezing was noticeably lower than the variation in the purchase prices of strawberries for juice.

Table 3. The variability of strawberry and raspberry purchase prices for processing after the introduction of the soft fruit payment mechanism in Poland

Item		Mean value		Significance of differences in mean values (p)	Coefficient of variation [%]	
		2001-2007 period I	2008-2014 period II		period I	period II
Purchase prices for processing [PLN/kg]	raspberries for processing	2.59	3.57	0.0110	34	25
	strawberries for freezing	2.19	3.04	0.2566	54	34
	strawberries for juice concentrate	1.37	2.04	0.2941	58	50
Purchase prices for processing adjusted by the CPI index [PLN/kg]	raspberries for processing	2,31	2,64	0,2008	32	25
	strawberries for freezing	1,96	2,23	0,6351	54	31
	strawberries for juice concentrate	1,22	1,49	0,5802	58	47

Source: own calculation based on the Central Statistical Office (GUS) and the Institute of Agricultural and Food Economics (IERiGŻ) data

Soft fruit subsidies were introduced to support fruit producers. This effect can be achieved by stabilising prices on the market. In the period after the introduction of soft fruit payments, the coefficient of variation in the purchase prices of raspberries and strawberries for processing was lower than before the introduction of this mechanism. This means that prices were less diversified in the later period and suggests the stabilisation of purchase prices, particularly purchase prices of strawberries for processing.

SUMMARY

Direct payments, currently supplemented with specialised production-related payments, are the main instrument of support for farmers under the first pillar of the CAP [Adamowicz 2018]. Soft fruit producers receive support dedicated to the fruit and vegetable market. These are subsidies to the plantation area. Initially, they were granted for the production of strawberries and raspberries for processing, and now they are only granted for strawberries. This instrument was introduced in Poland and some other Central European countries in 2008 to support producers providing raw materials for processing and maintain the production of raw materials that are important for the economy. According to GUS [2013] and Paweł Kraciński [2014], in Poland, 80% of harvested raspberries and nearly 70% of strawberries were intended for processing. In 2010, about 71% of strawberry plantations in Poland had an area below 0.5 hectares [GUS 2012, p. 92]. The production of strawberries for processing has become an additional source of income for numerous households in rural areas. From a social point of view, the sector plays a considerable role in rural areas [KWE 2006, p. 4].

The results of this study showed that, in comparison with the period before the introduction of soft fruit payments (2001-2007), the area of strawberry plantations and the yield of this fruit only changed slightly after the introduction of this instrument in Poland. On the other hand, the average area of raspberry plantations and the yield of this fruit increased significantly between 2008 and 2014, as compared with the period before the introduction of payments. Although the results of this study show that the area of raspberry plantations and yield increased significantly in the period after the introduction of payments, this increase was rather caused by a long-term development trend in the production of raspberries in Poland, whereas subsidies could only maintain this tendency.

In comparison with the period before the introduction of payments, average purchase prices of strawberries and raspberries for processing were higher after the introduction of soft fruit subsidies (2008-2014). On the other hand, the coefficients of variation in the purchase prices of fruits for processing decreased, indicating a stabilisation of prices[1]. However, it should be added that the variability of purchase prices of other fruit for processing also decreased[2], so it is not possible to make a clear association between the introduction of soft fruit subsidies and the stabilisation of purchase prices of strawberries and raspberries for processing. Additional studies are required.

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[1] According to the EC Report [Agrosynergie 2008, p. 41], „instability – variation of prices and/or marketed quantities, both within a marketing year and across the years".

[2] For example, the coefficient of variation in the purchase prices of black currants amounted to 79% and 54%, red currants – 57% and 22%, gooseberries – 55% and 23% in the period of 2001-2007 and 2008-2014 respectively.

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PŁATNOŚĆ DO OWOCÓW MIĘKKICH JAKO INSTRUMENT WSPÓLNEJ POLITYKI ROLNEJ UE A ZMIANY W UPRAWACH I CENACH SKUPU MALIN I TRUSKAWEK W POLSCE

Słowa kluczowe: wspólna polityka rolna, płatności do owoców miękkich, powierzchnia uprawy malin i truskawek, ceny skupu malin, ceny skupu truskawek

ABSTRAKT

Przedstawiono instrumenty wspólnej polityki rolnej UE dla rynku owoców i warzyw, a szczegółowej analizie poddano mechanizm wsparcia producentów owoców miękkich, wprowadzony w 2008 roku w Polsce. Zbadano zmiany powierzchni uprawy, zbiorów oraz zmienność cen skupu malin i truskawek do przetwórstwa w Polsce w latach 2008-2014, w odniesieniu do okresu poprzedzającego wprowadzenie tego instrumentu (lata 2001-2007). Do określenia zmian badanych cech obliczono indeks zmian oraz współczynnik zmienności. Określono istotność różnic między średnimi badanych parametrów (powierzchnia, zbiory, ceny) w wyznaczonych okresach, stosując test istotności różnic dla prób zależnych. Analiza pozwoliła na stwierdzenie, że istotnie (dla $p < 0,05$) zwiększyła się powierzchnia, zbiory oraz średnie ceny skupu malin, natomiast niewiele zmieniła się powierzchnia uprawy oraz zbiory truskawek. Wzrosły średnie ceny skupu truskawek, jednak były to zmiany nieistotne statystycznie. W okresie stosowania dopłat do owoców miękkich (w latach 2008-2014), w porównaniu do okresu przed wprowadzeniem płatności, obniżeniu uległy współczynniki zmienności cen skupu malin i truskawek do przetwórstwa, co wskazuje na stabilizację cen tych owoców, jednak nie można tego efektu jednoznacznie przypisać wprowadzeniu instrumentu płatności do owoców miękkich.

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