

REGIONÁLNÍ ROZDÍLY V PRODUKCI ŘEPKY V POLSKU V LETECH 2005 - 2015

Regional differences in rapeseed production in Poland in 2005-2015

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Summary: Regional differences in rapeseed production in Poland were presented in the article. The area under rapeseed, rapeseed cultivation systems, rapeseed yields, production and changes in production in 2004-2015 were discussed and compared with the use of graphic and descriptive methods. The results indicate that rapeseed production in Poland increased in the analyzed period in all regions. The greatest increase was noted in the regions of Dolny Śląsk, Wielkopolska, and Kujawy and Pomorze. The observed increase in rapeseed production resulted mainly from an increase in cultivated area and, to a smaller extent, an increase in yields. The regions of Podlasie, Śląsk, Świętokrzyskie, Małopolska and Podkarpacie were characterized by the smallest increase in rapeseed production in 2004-2015.

Keywords: rapeseed, production, market, yield

Souhrn: Článek se zabývá regionálními rozdíly v produkci řepky v Polsku. Pomocí grafů a popisných metod znázorňuje a porovnává plochy řepky, pěstitelské systémy, výnosy, produkci a změny v produkci řepky v letech 2004 – 2015. Výsledky ukazují, že produkce řepky v Polsku se ve sledovaném období zvýšila ve všech regionech. Největší nárůst produkce byl zjištěn v regionech Dolny Śląsk, Wielkopolska, Kujawy a Pomorze. Zvýšení produkce řepky bylo způsobeno zejména zvýšením pěstební plochy a v menší míře zvýšením výnosů. Nejnižší nárůst produkce řepky měly v letech 2004 – 2015 regiony Podlasie, Śląsk, Świętokrzyskie, Małopolska a Podkarpacie.

Klíčová slova: řepka, produkce, trh, výnos

Introduction

The production of rapeseed continues to grow dynamically in Poland, the European Union and other countries in the world. Rapeseed is in high demand in the petrochemical industry and the food and feed processing sectors which compete for this resource and increase its market price [Budzyński et al., 2015]. In Poland, the average price of rapeseed reached PLN 1616/t in 2016, marking a 27.4% increase from 2008 (PLN 1268/t) [Rynek rzepaku 2017].

The proportion of winter rapeseed in the Polish cropping system increased from 3.6% in 2000 to 9% in 2015 [Rosiak 2014a, Rynek rzepaku...2017]. Higher demand for rapeseed oil in the biofuel industry could boost the production of rapeseed and increase its competitiveness in relation to wheat. The European Union's biofuel policies will be of critical significance for rapeseed producers. The EU Member States have pos-

tulated to decrease biofuels' share of the European fuel market from 10% to 7%, which could lower the demand for rapeseed oil by 2020 [Izdebski et al. 2014].

The trade in the seeds of oil-rich crops and oilseed products continues to increase, and these goods accounted for 4.0% of Polish exports and more than 11.5% of Polish imports in 2000 [Kapusta 2012, Szymańska, Bedycka-Bórawska 2014]. In 2014, their share of exports did not change, but their share of imports decreased to 6%. Rapeseed oil accounted for 72% of Poland's oilseed exports, and the major importers were the Czech Republic, Germany and Slovakia [Handel...2014]. In 2016, the value of Polish exports and imports of seeds, fruit and industrial crops reached EUR 265 million and EUR 579 million, respectively, which resulted in a negative trade balance of EUR -314 million [Rynek rzepaku 2017].

Research Objective, Materials and Methods

The aim of this study was to analyze regional differences in rapeseed production in Poland in 2004-2015. Changes on the domestic rapeseed market were analyzed over a period of 11 years. The area under rapeseed, rapeseed production and yields were dis-

cussed and compared with the use of graphic and descriptive methods. Data for analyses were provided by the Institute of Agricultural and Food Economics – National Research Institute in Warsaw. The results were compared with other EU countries.

Results

In 2015, the area under rapeseed was largest in the regions of Dolny Śląsk (133,700 ha), Kujawy and Pomorze (117,400 ha), Wielkopolska (114,600) and Pomorze Zachodnie (113,300 ha). These regions are characterized by high-quality soils and a favorable climate for rapeseed production. In the above regions, rapeseed is produced mainly in large-scale farms. In

2015, the smallest area under rapeseed was noted in the regions of Małopolska (7,800 ha), Świętokrzyskie (9,800 ha), Podlasie (11,100 ha), Śląsk (19,700 ha), Łódź (23,300 ha) and Podkarpacie (23,400 ha). These regions are characterized by less favorable weather conditions for rapeseed cultivation and a predominance of smaller farms.

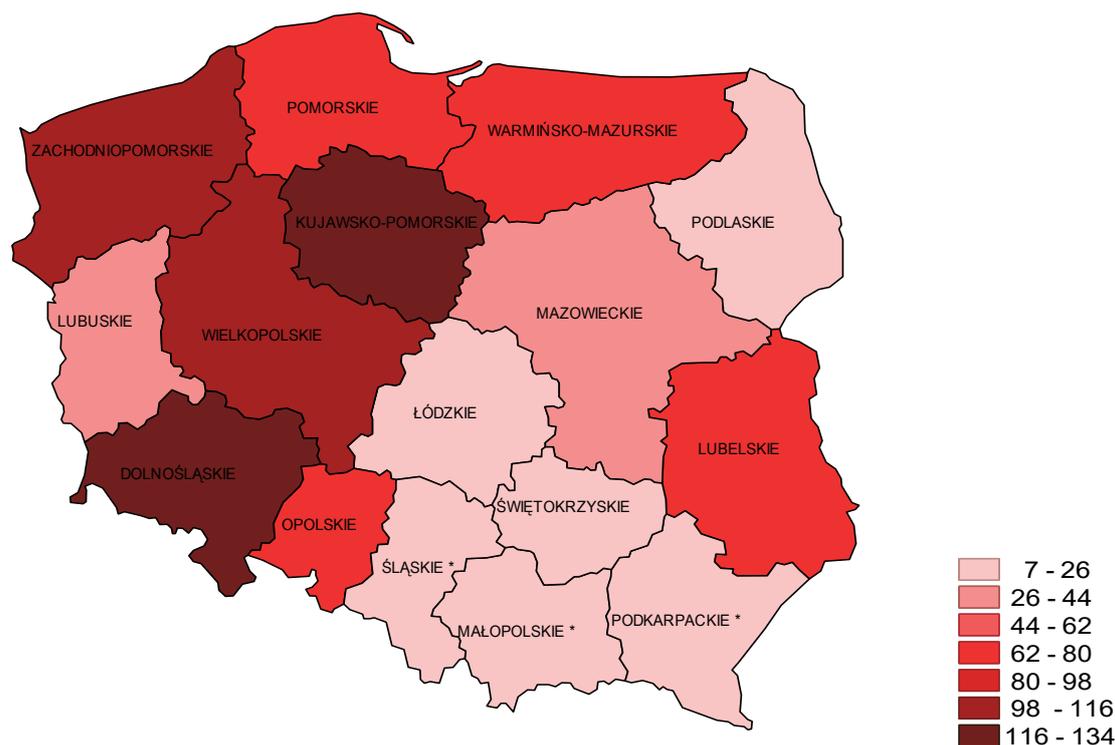
In the EU, the area under rapeseed changed between 2008 and 2015. The countries with the largest area under rapeseed were France (1.51 million ha), Germany (1.29 million ha), Poland (0.93 million ha) and Great Britain (0.65 million ha). Poland ranks third in the EU with regard to the area under rapeseed, and it has an 11% share of the EU market in terms of rapeseed production and a 9% share in terms of rapeseed oil and rapeseed meal production [Rosiak 2014a]. Poland is also the world's sixth largest producer of rapeseed [FAOSTAT 2017].

Rapeseed yields are influenced by numerous factors, including soil quality, climate, production system and farming intensity which is generally higher in large-scale farms [Budzyński et al., 2015]. In 2015, rapeseed yields were highest in the regions of Wielkopolska (31.6 dt/ha), Pomorze Zachodnie (30.1 dt/ha), Lubuskie (29.6 dt/ha), Pomorze (29.1 dt/ha), Dolny Śląsk (28.7 dt/ha), Kujawy and Pomorze (28.6 dt/ha), Łódź (27.2 dt/ha) and Podlasie (28.7 dt/ha). These regions are characterized by a favorable climate for rapeseed production, they cultivate

high-yielding hybrid varieties, maximize their yield potential and implement effective agricultural practices (Bartkowiak-Broda 2002).

In 2015, the EU countries with the highest rapeseed yields were Denmark (4.37 dt/ha), Great Britain (3.90 dt/ha), Germany (3.83 dt/ha), France (3.54 dt/ha) and Poland (3.33 dt/ha) [Rynek rzepaku 2017]. In Poland, the lowest rapeseed yields in 2015 were noted in the regions of Mazowsze (23.0 dt/ha), Podkarpacie (24.0 dt/ha) and Lublin (24.8 dt/ha), which could be attributed to less favorable weather conditions, lower wintering success and lower farming intensity. In 2016, rapeseed yields reached 26.8 dt/ha, marking a 6% decrease from 2015. The decrease in rapeseed yields in 2016 resulted from prolonged drought in 2015, unfavorable winter weather (temperatures below -20°C without snow cover), low precipitation in April and May, and high daily fluctuations in temperature in early spring which caused damage to plants and weakened their root systems [Rynek rzepaku 2017].

Figure 1. Area under rapeseed in Poland in 2015 ('000 ha).

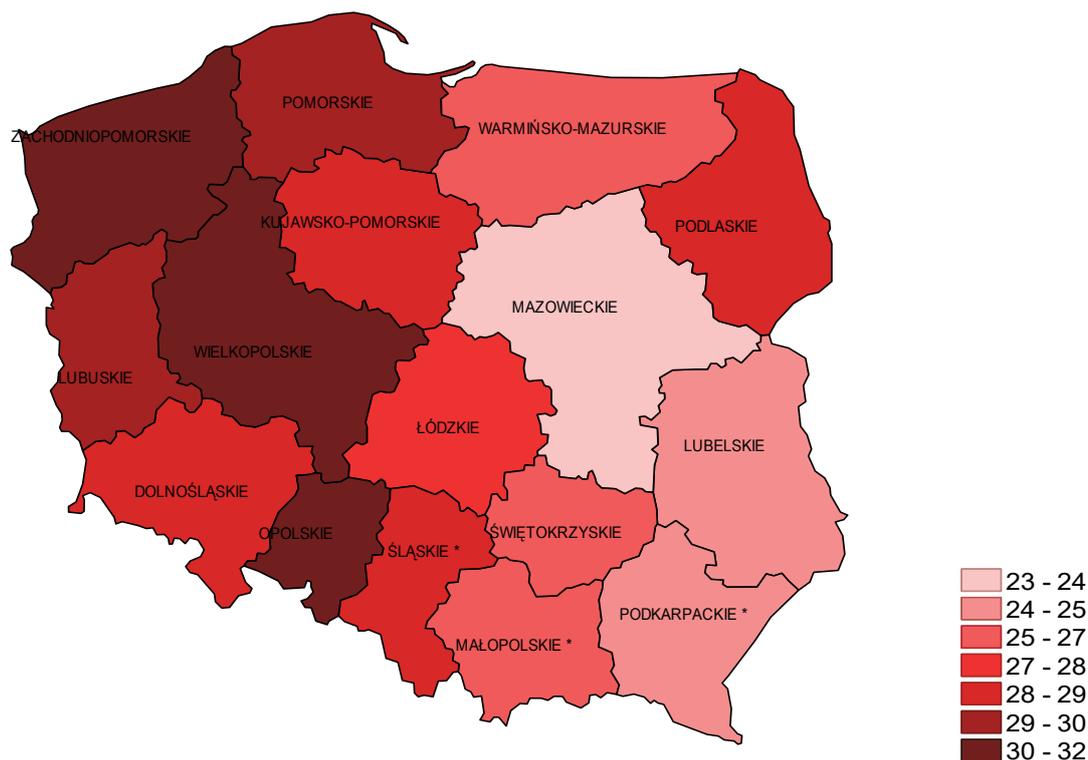


Source: Janusz Wątroba, Ph.D., based on Rynek rzepaku...2016.

Rapeseed production is a derivative of the area under rapeseed and rapeseed yields. In 2015, rapeseed production was highest in the regions of Dolny Śląsk (384,000 t), Wielkopolska (362,700 t), Pomorze Zachodnie (341,200 t) and Kujawy and Pomorze (335,800 t). The lowest production levels were noted in the regions of Małopolska (20,000 t), Świętokrzyskie (24,900 t), Podlasie (31,700 t), Podkarpacie (56,200 t), Śląsk (56,500 t) and Łódź (63,500 t). In 2015, the larg-

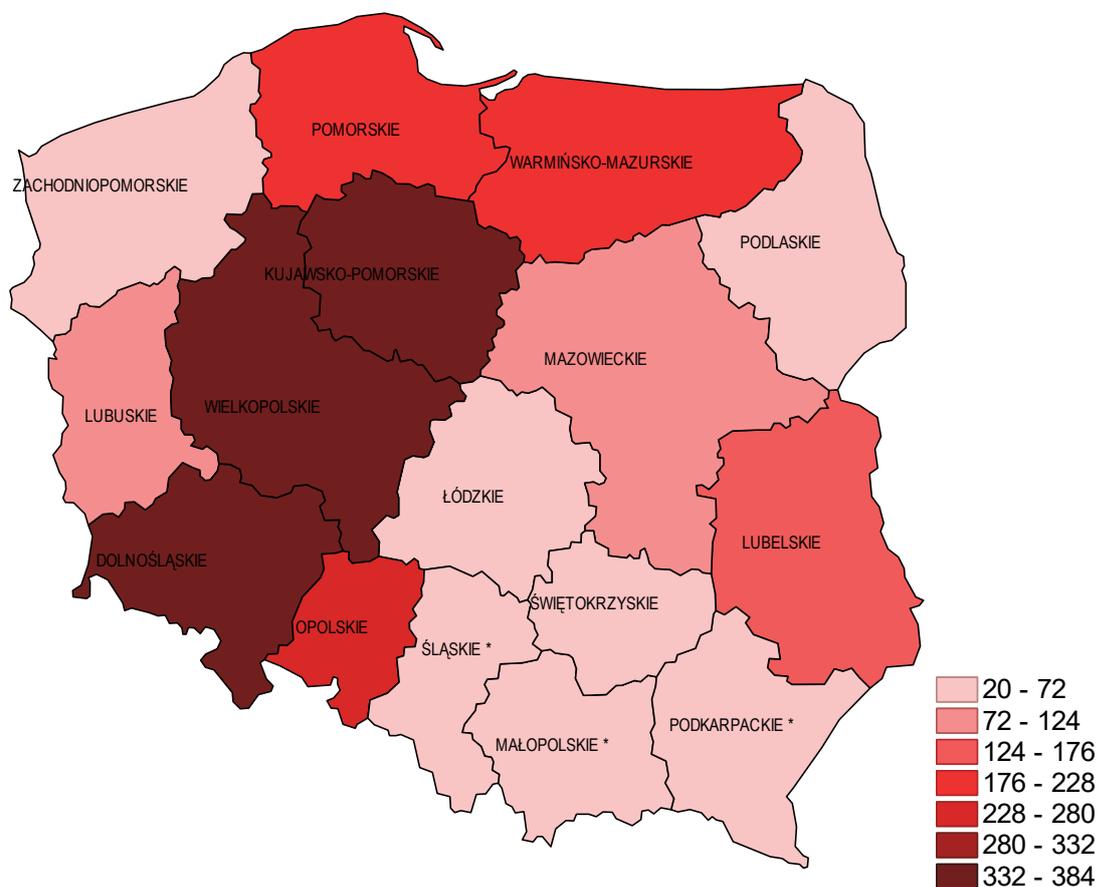
est rapeseed producers in the EU were France (5.33 million t), Germany (4.92 million t), Poland (3.10 million t) and Great Britain (2.54 million t). In comparison with 2015, rapeseed production decreased in 2016 in Poland (by 30.6%), Great Britain (30.3%), France (11.3%) and Germany (6.1%). According to Oil World data, the drop in the production and supply of rapeseed in the EU-28 will increase imports by 4.1 million tons (17%) and decrease exports by 0.3 million tons (5.7%) [Rynek rzepaku 2017].

Figure 2. Rapeseed yields in Poland in 2015 (dt/ha).



Source: Janusz Wątroba, Ph. D., based on Rynek rzepaku...2016.

Figure 3. Rapeseed production in Poland in 2015 ('000 tons).



Source: Janusz Wątroba, Ph. D., based on Rynek rzepaku...2016.

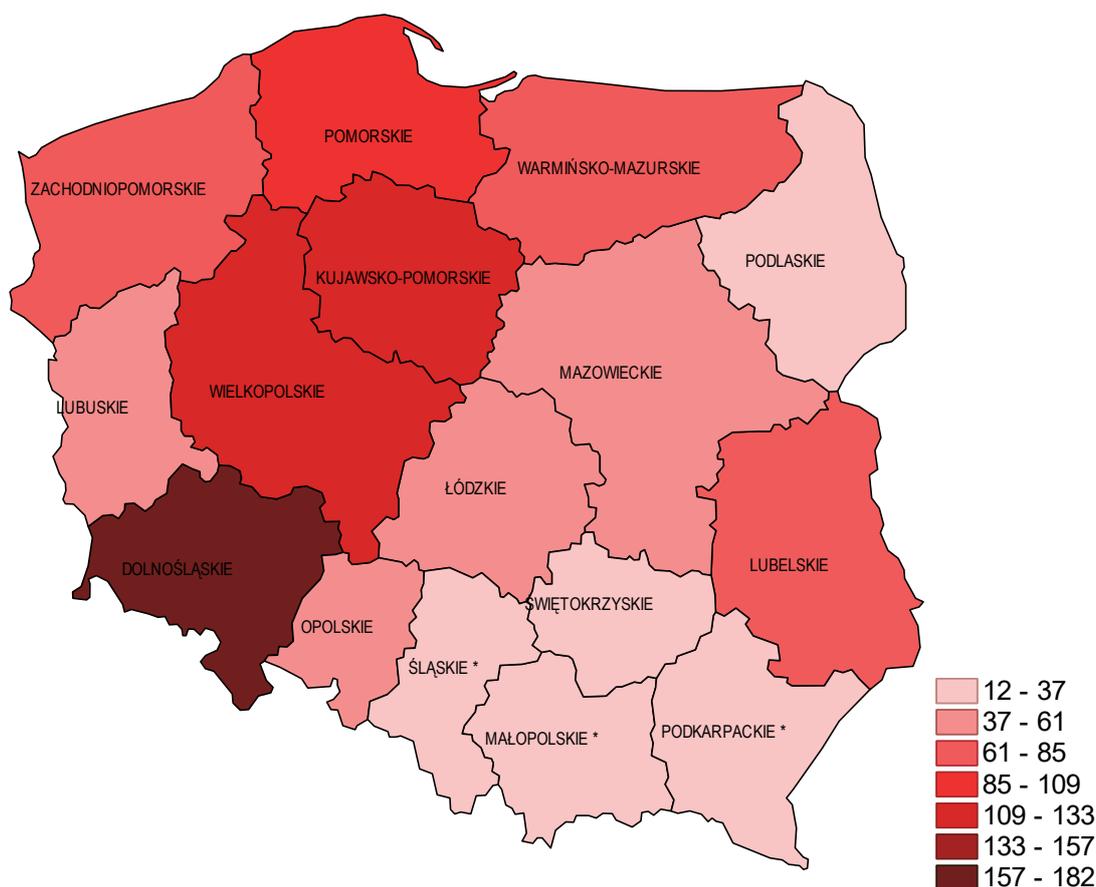
Changes in rapeseed production in 2004-2015 are presented in Figure 4. An increase in rapeseed production was noted in all Polish regions in the analyzed period. The highest increase was noted in the regions of Dolny Śląsk (181.6%), Wielkopolska (129%), Kujawy and Pomorze (127.2%) and Pomorze (99.7%). The lowest increase in rapeseed production was observed in the regions of Małopolska (12.5%), Świętokrzyskie (18.5%), Śląsk (18.9%), Podlasie (25.8%) and Podkarpacie (27.9%).

Before Poland joined the EU, it processed around 330,000 tons of rapeseed products, and its output increased to around 1.1 million tons in 2013-2015. Margarine production also increased from 350,000 tons to 420,000 tons in the corresponding period [Rynek rzepaku 2017]. The Polish market of edible fats is characterized by changes in profitability which in-

creased after the accession and in 2013-2014 and decreased in 2011-2012 and 2015. The observed fluctuations resulted from global economic trends and the performance of the food market. Frequent changes in the profitability of the edible fats market obstruct modernization projects and compromise production capacity [Rynek rzepaku 2017].

The market of oilseed crops continues to grow dynamically in Poland and in the world, mainly because oilseed plants are used in the production of edible oils as well as biofuels [Boczar 2014]. In the EU, 10% of transport fossil fuels should be replaced with biofuels by 2020 [Directive 2009/30/EC]. In Poland, biofuels accounted for 7.1% of transport fuels in 2013, which indicates that the demand for rapeseed will increase [Rosiak 2014b].

Figure 4. Changes in rapeseed production in Poland in 2004-2015 (%).



Source: Janusz Wątroba, Ph. D., based on Rynek rzepaku...2016.

Summary and Conclusions

In Poland, rapeseed production differs across regions, which testifies to the high potential of domestic producers. Rapeseed production rose in all Polish regions in 2004-2015. In the analyzed period, the highest increase in rapeseed production was noted in the regions of Dolny Śląsk (181.6%), Wielkopolska (129%), Kujawy and Pomorze (127.2%), and Pomorze (99.7%), which can be attributed to high-quality soils and a favorable climate. In these regions, rapeseed is cultivated mainly in large-scale farms. Rapeseed yields are influenced by numerous factors, in par-

ticular the production system, climate and precipitation. Due to significant differences in the above factors, in 2015, the highest rapeseed yields were noted in the regions of Wielkopolska (31.6 dt/ha), Pomorze Zachodnie (30.1 dt/ha), Pomorze (29.1 dt/ha) and Lubuskie (29.6 dt/ha). In 2016, rapeseed production decreased both in Poland and the EU, which will increase imports and decrease exports. As a result, rapeseed prices are likely to remain high on the Polish market, and Poland's energy independence will decrease.

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