

State and Perspectives of Milk Production in the Republic of Belarus in Comparison with the Condition of the Polish Dairy

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Received January 09.2015; accepted January 19.2015

Summary. The aim of the publication was to assess the status and prospects for milk production in Belarus against the prospects in Poland. The data used in this study were sourced from elaborations and statistical yearbooks of Polish and Belarus and publications on the topics of milk production in Poland and Belarus. Poland and Belarus are discernibly different in the structure of milk production. In Poland, the main suppliers of milk to processing establishments are private sector holding, while in the Republic of Belarus, the main producers of milk are large-scale farms managed by the State. Milk production in Belarus in recent years hovers around 6 million tones and is almost by half lower than in Poland. The average annual milk yield of 1 cow in 2012 in Belarus was 4712 l, while in Poland it reached the level of 4845 l. The participation of Belarus in world milk production is 0.9%, while in the milk trade it reaches the level of 4-5%. According to the plans of the Ministry of Agriculture of Belarus for 2015, cow population in this country is to be increased to 1.6 million units, milk production to 10 million tons, while exports to 5.5 million tons. The work also included publications useful in this type of analysis.

Key words: Poland, Belarus, milk production.

INTRODUCTION

Milk production in the European countries is dependent on the local conditions, as evidenced by selected works [1, 4, 12, 15, 18, 20]. In the literature no work on comparisons of animal husbandry and milk production in Belarus and other countries is found. Agriculture in the Republic of Belarus occupies an important place in the economy of this country. The area of arable land in Belarus is 8.87 million hectares, while since 2005 it has been reduced by 130 thousand ha. The reason for this was disconnection of the less fertile lands and their application for the purposes of use for forestry. Rotation of land in the Republic of Belarus is regulated by law. According to the Belarusian law, agricultural land

cannot be sold and its destination cannot be changed, e.g. on the forest land it requires the permission of the authorities. Private farmers can have up to 100 hectares of land, but it can be passed as legacy to farmer's partner or his family. The land larger than 100 hectares is leased by farmers from state resources. About 7.6 million ha of agricultural land is held by organizations of agricultural production in which the majority is owned by the state. Private farmers use about 127 thousand hectares of agricultural land. The remaining agricultural land is owned by the citizens of Belarus and serve as home gardens. At the turn of 2006-2012 homestead land area decreased from 1.23 to 0.9 million. ha. The reason for this is mainly the younger generation migration from the countryside to the cities.

The average area of private farms in Belarus has not changed for years and it reaches 55 hectares. In contrast, the area of production owned by agricultural organizations has increased. In 2006 the average size of a large scale farm was 3930 ha, whereas in 2012 – 4885 ha. This is a result of the program (implemented by the Belarusian authorities) to improve the efficiency of agricultural sector, which consisted in, among others, the transfer of less efficient farms under the management of effectively operating manufacturing organizations [11]. Currently, the agricultural sector in the Republic of Belarus secures the nutritional needs of the country. In the past five years in Belarus 17 modernization programs of specific sectors of agriculture were implemented. One of them is the dairy sector development program for 2011-2015, which envisages the construction of modern dairy farms and upgrading old ones. The program assumed establishing 875 new dairy farms and reconstruction in 1360 currently operating ones. In the Republic of Belarus there are nearly 5 thousand dairy farms. Until January 1, 2012 1510 dairy farms were modernized [12]. An important role is also played by the dairy sector in Poland, which is dominated by small-scale farms. Differences in the agrarian structure

between Poland and Belarus are indicative to conclude that these countries are different as to the state of milk production. The purpose of this study was to assess the status and prospects for milk production in Belarus against the prospects in Poland.

CURRENT STATE OF KNOWLEDGE AND PROSPECTS OF MILK PRODUCTION

Issues of milk production in Poland and Belarus in the context of the market have been addressed by many authors. The Polish science has a significant contribution to knowledge about the market issues related to the production of milk from specialists from the Institute of Agricultural and Food Economics, who publish a regular report showing: „The market for milk. Status and prospects”. Valuable information in terms of market is provided by Zietara, who analyzed the share of milk production in the commodity structure of production in Poland in the years 2000-2010 [29] and Smiglo, who discusses the dairy sector in the European Union and Poland after 2004, using the SWOT analysis [26]. Questions of [6, 7], Suboch [24, 25], Grickievich [8], Shishko [22, 23].

The available literature lacks works on comparative analysis of milk production in Poland and Belarus. The purpose of this publication is to supplement the above mentioned information gap.

SOURCE MATERIAL AND METHODOLOGY ASSUMPTIONS

The source of the data used in this study were statistical yearbooks and Polish and Belarusian elaborations as well as publications on the topics of milk production in Poland and Belarus.

ANALYSIS OF THE STATE OF MILK PRODUCTION IN BELARUS AND POLAND

After 1991 in the Republic of Belarus changes in agricultural production related to the change in political and economic systems took place. As a result of these changes in Belarus the number of bovine animals decreased, and in 1995 it exceeded 2 million pieces. The downward trend in the number of cows remained until 2011. From 2012 in Belarus, there has been a slight increase in cattle numbers. A similar trend was observed in Poland. An important difference between the Poland and Belarus is the size of the

cattle population. In 2012, the number of cows in Poland reached 2 578 thousand pieces, while the number of cows in Belarus amounted to 1 519 thousand pieces. Changes in the number of cows Poland and Belarus are presented in Table 1.

The vast majority of cows (1 411 thousand pcs) in the Republic of Belarus are in agricultural production organizations. The share of these organizations in the cow herd size in 2013 amounted to 92.2%. The remaining cows are in the domestic farm (7.2%) and farms households (0.2%). It is worth mentioning that in 2001 the share of household farms in the number of cows in Belarus amounted to 32.4%. A very small proportion of cows in the herd size are in farmer holdings. From 2001 until 2013 the share of households in the cow herd size increased from 0.1 to 0.2%.

In Poland, nearly 96% of herds of cows is in the private sector. In 2012 in the public sector there were only 33.5 thousand pieces.

In the 90s the Republic of Belarus faced a substantial decrease in milk production. In 1990 milk production in the country amounted to 7 457 thousand tons. In 1996, 4908 thousand tons were produced, which accounted for 68.8% of the 1990 production. The lowest level of milk production in Belarus (4490 thousand tons) was recorded in 2000. The reasons for this were adverse weather conditions. Since 2001, Belarus has had an upward trend in milk production. In 2012, 6 766 thousand tons of milk were produced in Belarus. As compared to milk production in Poland it is 2-fold lower. Under Belarusian conditions more than 85% of the milk is obtained in agricultural production organizations. The share of households with farm and domestic milk production is only 15%. In Poland, the vast majority of milk is obtained in individual farms. Milk production data in Poland and Belarus are presented in Table 1.

Annual milk yield of 1 cow has an important role in the efficiency of milk production. In Poland, since 2000 there has been a significant increase in milk production from 1 cow. In 2000, the annual milk yield of 1 cow in Poland amounted to 3668 liters, while in 2012 it reached the level of 4845 l. In the individual holdings these were respectively: 3613 l and 4732 l. In Belarus in 2009-2013 the average milk yield per cow was 4, 5-4,7 thousand liters and thus it was similar to the results obtained in recent years. In 2013, the average yield of 1 cow in Belarus amounted to 4568 kg. In some production organizations, in 2013 the milking of one cow was lower than 3 thousand kg, and the leading units exceeded the value of 6300 kg. Mean values of milking from 1 cow in Belarus and Poland are shown in Fig. 1.

Households in the Minsk region reach the highest values of milk yield in Belarus. Farms in the area have results above 5 thousand kg. The second largest score (4800-4900 kg)

Table 1. Number of cows and milk production in Poland and Belarus

	Poland			Belarus			
	2010	2011	2012	2010	2011	2012	2013
Numer of cows [thous. pcs]	2 657	2 626	2 578	1 478	1 477	1 519	1 525
Milk production [mln tons]	11,9	12,0	12,3	6,6	6,5	6,8	6,6

Source: authors' calculations based on data from the GUS 2013, Belstat 2014

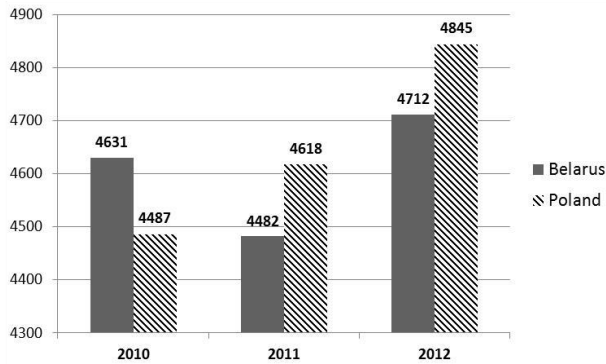


Fig. 1. Average annual milk yield from 1 cow in the Republic of Belarus and Poland [kg]

Source: own study based on CSO 2013 Belstat 2014

Source: authors' calculations based on data from the Central Statistical Office 2013 Belstat 2014

is obtained by households in Grodno region and the third position is for Mogilev Region (4500-4800 kg).

In Poland, the best performances in terms of milk yield of one cow are obtained by households in the regions of Wielkopolska (5767 kg in 2012.), Mazowiecki (5166 kg) and Kujawsko-Pomorskie (5138 kg).

In Belarus one can recognize the differences in the average annual yield of 1 cow depending on the type of farms. The best results are obtained by agricultural production organizations. As demonstrated by the analysis of yields in different regions, until 2011 the farms had worse production results in relation to domestic households. Since 2011 the differences have been reduced. In 2013 higher average annual results of milking in dairy farms in relation to the farmer's backyard holdings were reported in the Minsk and Mochylewski oblasts. The average annual milk yield of 1 cow in farms in particular areas in the Republic of Belarus in 2013 is shown in Figure 2.

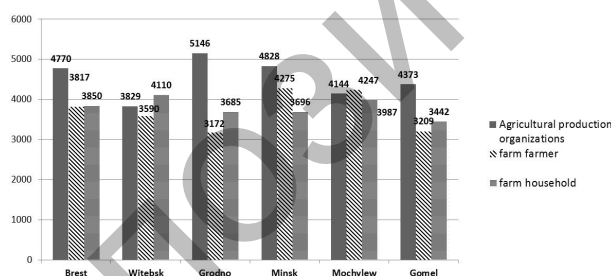


Fig. 2. Average annual milk yield from 1 cow at farms in various districts of the Republic of Belarus in 2013 [kg]

Source: authors' calculations based on data from the Belstat 2014

PROSPECTS FOR MILK PRODUCTION IN POLAND AND BELARUS

In the last five years agriculture in Belarus, including the dairy sector, has been fulfilling the internal demand for food products [12]. Much of the production has been destined for export. The main market for dairy products from Belarus is Russia. Till 2009 Russia's share in exports from Belarus

accounted for 75% [9]. In 2013 the share of the Russian Federation and Kazakhstan in the export of dairy products from Belarus was 93% [10]. Restrictions on the export of dairy products to Russia in 2009 were an impulse for Belarusian producers to seek other external markets. In order to increase the competitiveness of Belarusian milk producers on external markets, since 1 January 2008 there has been a new quality standard in Belarus in procurement of milk according to the standards of the European Union. Since 1st of January 2011 the Republic of Belarus has had a new milk quality control system covering the production, transport and processing. As a result, now Belarus has stricter requirements for the acceptable amount of antibiotics in milk. While European standards allow a maximum amount of antibiotics at the level of 100 micrograms per 1 kg of milk, the Belarusian standard allows only 50 micrograms [6]. Despite the implementation of the new standards, the European Union market for Belarusian dairy products is largely closed. One of the reasons is the lack of EU accreditation for the Belarusian enterprises in dairy sector. Another reason are grants from the EU budget for the EU producers and farmers, which make the production of Belarusian ones uncompetitive in the European markets. Currently, the modernization of the dairy sector in Belarus is being carried out at a moderate pace [7]. Despite that, the participation of Belarus in global dairy markets is gradually increasing. In the period 2000-2010 the export of dry milk from Belarus has increased more than 32-fold, while the curd and cheese – 7.5 fold. At the turn of 2010-2012 the growth in exports of Belarusian products exceeded 30% [2]. Belarus' participation in the global production of milk is 0.9%, while the trade in milk reaches the level of 4-5%. According to the plans of the Ministry of Agriculture of Belarus for 2015, cow population in this country is to be increased to 1.6 million units, milk production to 10 million tons, while exports to 5.5 million tones [10].

Poland has witnessed a strong trend of concentration of milk production at farms, together with the high state of concentration of production at the national level in different regions [8]. It is assumed that the future of the Polish dairy market will depend primarily on the situation in the global markets and the direction of the evolution of the economic policies of the major players in the market in relation to the dairy industry. Certainly, the prospects of Polish milk production will be affected by liquidation of milk quotas and export subsidies, and almost all the instruments supporting the internal market in the European Union, including tariff reduction, depending on the final agreement [13] in 2015. It should be noted that the analyses can be useful for determining the water footprint and carbon footprint. In addition, in the future the energy consumption of dairy production in Belarus and other countries can be compared. The works of selected Polish authors such as Wojdalski et al. may be useful in this regard [27, 28].

CONCLUSIONS

Differences in the structure of milk production between Poland and Belarus are discernible. In Poland, the

main suppliers of milk to processing establishments are dairy farms in the private sector, while in the Republic of Belarus the main producers of milk are large-scale farms managed by the State. The number of cows in Belarus is approx. 1 million items lower than in Poland. This is reflected in the production of milk, which is almost by half lower than in Poland. The reduced milk production in Belarus is also due to a lower average milk yield of 1 cow. As in Poland, there has been modernization of milk production in Belarus. The process of modernization of dairy farms has been financed from the budget within the 5-year programs of modernization of agriculture. In recent years, the Republic of Belarus has increased the export of dairy products mainly to the markets of the Russian Federation and Kazakhstan.

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OCENA STANU I PERSPEKTYW PRODUKCJI MLEKA W BIAŁORUSI NA TLE KONDYCJI PRZEMYSŁU MLECZNEGO W POLSCE

Streszczenie: Celem publikacji była ocena stanu i perspektyw produkcji mleka w Białorusi na tle perspektyw w Polsce. Źródłem danych wykorzystywanych w niniejszej pracy były opracowania roczniki i opracowania statystyczne Polski i Białorusi oraz publikacje dotyczące zagadnień produkcji mleka w Polsce i Białorusi. Pomiedzy Polską a Białorusią dostrzegalne są różnice w strukturze produkcji mleka. W Polsce głównymi dostawcami mleka do zakładów przetwórczych są gospodarstwa sektora prywatnego, natomiast w Republice Białoruś główni producenci mleka to wielkoobszarowe gospodarstwa zarządzane przez Skarb Państwa. Produkcja mleka w Białorusi w ostatnich latach oscyluje na poziomie 6 mln ton i jest prawie o połowę mniejsza niż w Polsce. Średni roczny udój od 1 krowy w 2012 r. wynosił w Białorusi 4712l, podczas gdy w Polsce osiągnął poziom 4845l. Udział Białorusi w światowej produkcji mleka wynosi 0,9%, zaś w handlu mlekiem osiąga poziom 4-5%. Zgodnie z planami ministerstwa rolnictwa Białorusi do 2015 r. pogłowie krów w tym kraju ma być zwiększone do 1,6 mln sztuk, produkcja mleka do 10 mln ton, zaś eksport do 5,5 mln ton. W pracy uwzględniono także publikacje przydatne w tego typu analizach.

Słowa kluczowe: Polska, Białoruś, produkcja mleka.