STOWARZYSZENIE EKONOMISTÓW ROLNICTWA I AGROBIZNESU
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Halina Kałuża

Siedlce University of Natural Sciences end Humanities, Poland

KEY FACTORS OF THE SUCCESS AND POSSIBILITIES OF REDUCING THE MILK PRODUCTION COSTS IN SPECIALIZED FARMS IN POLAND

KLUCZOWE CZYNNIKI SUKCESU I MOŻLIWOŚCI OBNIŻENIA KOSZTÓW PRODUKCJI MLEKA W GOSPODARSTWACH SPECJALISTYCZNYCH W POLSCE

Key words: milk production, production potential, factor of success
Słowa kluczowe: produkcja mleka, potencjał produkcyjny, czynnik sukcesu

Abstract. The paper discusses trends in dairy cows population and milk production in Poland in the period 2004-2009 and the further changes until the year 2015. The aim of the paper was to present the key factors of the success in possibilities of reducing the milk production costs in specialized farms in Poland. Costs of production of bulky feed had about 53%. The factors were the smallest cost of: services and hired work, buying fodder, buying farm heifer, own cubic and filling fodder. In the smallest profitability, sum of savings in the above kind of cost could be even to 92.8% all of the possible savings. Slight differences between the farms with the lowest and the highest production profitability concern the cost of artificial insemination, water, electricity, cleanness means. Average possibilities of the cutting down the milk production cost were: internal farm transport, vet cure and insurance. Moreover, the milk farms which wanted to achieve high profitability in production have to search the saving in every size and in every kind of the cost.

Introduction

After the introduction of the quota regime, the development of commercial dairy farms in Poland has proceeded very rapidly. In the years 2004-2009, the number of cattle remained at the same level and equaled 2.8 mln animals. However, the number of dairy cows dropped from 2770 to 2606 thous. animals. At present, the average number of dairy cows per one farm is 5.3, which is by 2.3 cows more than before Poland accessed the EU [Rocznik Statystyczny… 2008]. Nevertheless, raw milk production still is very fragmented. In 2007 as few as 10% cows belonged to herds of at least 50 animals [Seremak-Bulge 2009]. Very positive changes have taken place over the last six years. The greatest increase, by 145%, was observed in the wholesale quota per one farm at the end of the quota year 2008/2009. In spite of such great changes, the amount of milk per one producer has remained low [Kasztelan 2007]. Also, the number of milk suppliers who have a wholesale milk quota has been declining, too. In 2009 there were around 180 thous. milk suppliers, but in the first quota year the number was almost twice as high. The fact that the number of milk suppliers is dropping results from an unfavourable situation on the milk market in addition to an introduction of compensations to the farmers who will give up individual referential milk quantities. At the same time, amounts of milk supplied by one producer increased to 48.5 thous. kg in the quota year 2008/2009 and were by around 2.2 kg greater than in the quota year 2004/2005 [Sych-Winiarek 2009]. Such substantial changes in the group of commercial dairy farms did not affect the territorial location of milk production in Poland. In 2004, half of the wholesale milk quota were in three provinces: the Mazovia (20%), Podlasie (17%) and Wielkopolska Province (13%). In 2009 the relations did not change markedly. There was only observed transfer of milk quota from the regions which were not very much involved in milk production to Mazovia and Podlasie. In the next years this trend is supposed to increase.

Materials and methods

The paper presents data collected within the FADN (Farm Accountancy Data Network). Studies included farms in the Mazovia region where milk production (dairy cows) predominates and which continuously kept FADN reports in the years 2004-2008. Complying with the FADN methodology, the farms reached over 2/3 standard gross margin (SGM) in cattle production (milk and meat) [Bocian 2010]. Due to the confidentiality of data collected from individual farms, values are presented as aggregated data taken as averages from at least 15 farms.

Moreover, in order to demonstrate key factors of successful production cost reduction, calculations were made of milk production costs of two Mazovian dairy farms. The region is characterized by average agricultural conditions and the size of dairy farms which is similar to the average size for the whole of Poland.

Results

The dairy farms were characterized by the following European Size Units (ESU): 15.5, 17.1, 18.3, 20.4, 20.6 in the respective years from 2004 to 2008. The average ESU in the study period was 18.37.

Analysis of direct costs calculation of producing 1 l milk on selected farms revealed a gross margin per 1 cow in 2009 to be at the average level of 2198.3 PLN. The average price of 1 l milk was 0.98 PLN and the average cost of producing 1 l milk was 0.86 PLN. The cost analysis of producing 1 l milk on the examined farms showed that the key factors of success include: the lowest costs of services, purchased feeds, on-farm roughages and concentrates. On the least profitable farms savings associated with the abovementioned types of costs could account for around 92.8% all the possible savings. Average possibilities of reducing milk production costs were associated with: on-farm transport, veterinary services and medicines as well as insurances. Minor differences between farms with the highest and lowest profitability of milk production (index of production profitability of 1 l milk, respectively, 112.55 and 112.34%) were in terms of the following costs: insemination, electricity, and cleansing agents.

Key factors of successful reduction of milk production costs seem to include a better use of permanent grassland as it may constitute an important element of reducing production costs because feed production from permanent grassland is almost twice as cheap as from cultivated land.

The average yearly rate of reduction in the number of wholesale suppliers amounted to 7%, taking into consideration tendencies in the concentration of milk production in Poland in the years 2004-2009. It was assumed that from 2010 to 2015 the rate of the decrease will be similar. Based on these assumptions, it was calculated that the estimated number

Table 1. Percentage of fodder plants in the area of arable land and number of animals per 100 ha arable land in the region of Mazovia
Tabela 1. Udział roślin pastewnych w powierzchni gruntów ornych i liczba zwierząt na 100 ha gruntów ornych na Mazowszu

Years/*Rok*	Percentage of fodder plants in the area of arable land/*Udział roślin pastewnych w powierzchni gruntów ornych*	Number of animals per 100 ha arable land/ *Liczba zwierząt na 100 ha gruntów ornych*
2004	55.7	122.9
2005	52.0	130.5
2006	59.5	132.0
2007	61.5	132.5
2008	60.2	133.5
Average/*Średnia*	57.8	130.3

Source/*Źródło*: Wyniki standardowe... 2009

Table 2. Total production costs per 1 ha arable land and direct costs in PLN per 1 ha arable land on the dairy farms in the region of Mazoviaia
Tabela 2. Całkowite koszty produkcji w przeliczeniu na 1 ha gruntów ornych i koszty bezpośrednie w zł na 1 ha gruntów ornych w gospodarstwach mlecznych na Mazowszu

Years/*Rok*	Total costs [PLN] per 1 ha arable land/*Całkowite koszty produkcji [PLN] na 1 ha gruntów ornych*	Direct costs [PLN] per 1 ha arable land/*Koszty bezpośrednie [PLN] na 1 ha gruntów ornych*
2004	3818	2086
2005	4169	2159
2006	4206	2177
2007	5111	2858
2008	5877	3259
Average/*Średnia*	4636	2508

Source: see tab. 1
Źrodło: jak w tab. 1

of wholesale suppliers in 2015 will amount to 123.6 thous. The expected milk quota for wholesale suppliers was established assuming that the yearly increase will amount to 1% under CAP. The wholesale quota in 2015 ought to amount to 9 958.0 mln t milk. When calculated per one wholesale supplier, it should amount to around 80 t milk, the average number of cows of a wholesale supplier being around 20 animals [Ziętara, 2010]. Such a herd size assures the supplier can obtain the parity income. At present, the minimum herd size in Poland associated with such an income falls within the range of 15-20 cows [Goraj et al. 2010].

Conclusions

1. Changes in the number of wholesale suppliers indicate that concentration of milk production has been taking place. In the years 2004-2010, the number of wholesale suppliers dropped by 50% but the wholesale quota per 1 supplier increased by 120%. Further reduction in the number of wholesale suppliers is expected to the level of 123.6 thous. in 2015.
2. The index of milk production profitability in 2009 for the farms analysed was at the average level of 117.5%.
3. The factors of successful reduction of milk production costs may include: costs of service, purchased feeds, as well as on-farm roughages and concentrates.

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Streszczenie

W pracy omówiono trendy w populacji krów mlecznych i produkcji mleka w Polsce w latach 2004-2009 i prognozy zmian do roku 2015. Celem pracy było przedstawienie kluczowych czynników sukcesu w zakresie obniżenia kosztów produkcji mleka w gospodarstwach specjalizujących się w produkcji mleka.

Corresponding address:
Dr hab. Halina Kałuża
Siedlce University of Natural Sciences end Humanities
B. Prusa Str. 12
08-110 Siedlce, Poland
tel. +48 25 643 13 17
e-mail: keior@ap.siedlce.pl