

THE SITUATION OF PRODUCTION AND PURCHASE OF RAW MILK IN BOSNIA AND HERZEGOVINA

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Abstract

This paper analyzes the production of milk as one of the most important branches of agriculture, which has been and should remain the backbone of its further development.

The structure of agricultural production in Bosnia and Herzegovina is unfavorable. Share of livestock production in the value of total agricultural production is about 40%. The main problems that face livestock and animal production in Bosnia and Herzegovina are small production, excessive imports, unfavorable structure of production, and low price of milk purchased and a very low standard of producers who are on the edge of existence.

Milk production in BiH, unfortunately, is still underdeveloped, disorganized and often does not meet the needs of industrial dairy processing capacity. Only 5% of milk producers with produced the quantity and quality of milk is fitting with their results in the requirements of market economy. Larger quantities of produced cow's milk do not meet the criteria of quality, particularly hygienic criteria in accordance with the requirements of international standards and quality regulations. Milk processing (and the market) and the consumption of milk and dairy products is the consequence of the unfavorable economic situation, decreasing living standards and purchasing power, and insufficient education of consumers about the importance of milk and milk products in the daily diet.

Dominant production system are small farms (1-3 cows) dealing with mixed livestock production, with the primary goal of self-sufficiency.

The data used in the paper were derived from statistical agencies, as well as his own research in the 6 largest milk processors in BiH (purchase and processing about 85% of total milk purchased in BiH). Number of dairy farmers of these 6 is 15,311, who own a total of 42,364 dairy cows. Average per cooperant is 2.77 cows. Average milk production per dairy cow is 4.081 liter.

Milk quality in accordance with Milk quality decree is unsatisfactory. E-class quality of the milk is only 42%, and worrying data is constant increase the milk quantity which, in accordance with the Decree, puts the raw milk outside of the class (2012th year 26%).

Keywords: milk, purchase, production

Introduction

The total level of development of agricultural production in a country depends, among other things, of the participation of livestock production in the structure of agriculture. Within livestock production milk production in Bosnia and Herzegovina is one of the most important branches of agriculture

The conditions for livestock production, from the standpoint of providing the volume and quality of feed are favorable. Changes in the structure of sowing areas and increased yields, can provide greater forage crops production. In the production of forage and concentrate feed positive changes can be made which represents a real difference that present a solid foundation for the growth of livestock production.

In developed market economies the main motive for milk production has become a profit. Milk production is affected by agro climatic factors, the level of economic development, religious composition of the population and the traditional aspect of the habit of consuming milk and milk products. The breed of cattle, measures of selection and production technology will influence level of productivity, quality of cow milk and production profitability.

Milk and milk products are an economic activity in agriculture and food processing dairy industry that is using milk as a raw material.

Bosnia and Herzegovina is one of the few European countries that, despite of favourable conditions for cattle raising, does not produce enough milk for their needs. Therefore, the strategic goal in milk production should be better use of comparative advantages and existing resources in order to achieve sufficient production for the domestic market. Here it should be noted that self-sufficiency is not a strategic objective, but consequence of better usage of existing comparative advantages in the milk production.

Rural households with poor land and capital, low production with a small number of cows per farm prevail. Development needs are imposing farm enlargement and construction of new, modern dairy farm. Increase of milk production on farms requires substantial capital. If the increase of households depends of the farm financial success and their own investments with the current conditions, milk production will continue to decline.

While government policy is inefficient, it cannot be expected that effect of economic principles encourage an increase in milk production. The world beyond recognition and globalization requires a shift that will properly evaluate and appreciate each farmer and each cow, a change that will encourage farmers to continue to cultivate the land, cherish rural environment and supply us with quality local products.

Especially in conditions of the extensive milk production there is a danger and the risk of inadequate hygienic quality of milk in relation to the number of microorganisms and somatic cells, the content of allowable residues of antibiotics, hormones and other banned substances. Therefore fresh raw cow's milk, as commercial milk that has been delivered to markets for further processing and use, must comply with the conditions prescribed by the international quality standards.

The European Union adopted in 1992. Directive on the conditions of production and sale of raw milk, processed milk and dairy products (Directive 46/92., Milk and milk product quality, health and hygiene).

In practice among EU member states there are some differences in the application of rules on hygienic correctness, but only in relation to the method of calculation and payment of milk.

The use and consumption of milk depends on the level of development of a country, purchasing power, food habits and standard of the population. In developed countries, more than 90% of milk produced is sold to dairies. In underdeveloped countries, productivity is at a low level while the milk is being used mainly for human consumption in households or in part, through dairy products sold in the local markets. Developed countries from domestic production of milk and milk products provide total annual demand and the surplus is exported. The international trade in milk and dairy products may include only those manufacturers that provide a certain assortment and the famous brand, and the ones that in the fierce competition can offer more favorable purchase price.

Level of profit is the main growth factor of milk production per cow and increase of dairy farms. An increase of milk production per cow and increase of dairy farms has emerged a number of new relations in the field of cattle and land relations, relations of production and consumption of milk.

Characteristics of milk production in Bosnia and Herzegovina can be linked to the conclusion of milk production in Croatia - Most economies function as acquired social category, not a business system, beef production is their tradition, a way of life, and less business activity.

There is an obvious low level of utilization of the production potential per cow, usually due to improper feeding and accommodation. Breed selection as the means of production is not profiled and it is inappropriate for possible intensity of production (Caput, 2003).

According to research by the Expert Centre for farm management and knowledge transfer, and the Institute of Animal Science, Research Center of Wageningen in the Netherlands (Grip, 2003)., the order of importance in managing the farm is as follows: the most important is nutrition (3.1), and right behind it is farm economics (3.5), followed by grassland management (3.8) and animal health (3.9). In the middle of importance is milking (5.1). The following is management of minerals (6.0), growing offspring (6.3), the organization of labor (6.8), breeding and selection (7.1) and machinery (9.2). In this graduation, a 1.0 rating is the most important in the management, while the score 10 least significant.

Materials and methods

On the basis of available statistical data and calculations, this paper shows the number of dairy cows that is the basis for the production of milk in the period in 2002. to 2012th in the Federation of Bosnia and Herzegovina and the Republic of Srpska. Then it is showed the volume of milk production and milk yield per dairy cow, analysis of milk purchase, and the number of milk producers and the average production per producer in the 2012th year; for this data we used survey of 6 largest dairies in BiH that purchase around 86% of the total purchased milk in BiH.

Results and discussion

Based on the guidelines on good farmer practices in milk production (Scheme1.), basic problems in milk production in Bosnia and Herzegovina can be identified.

Scheme 1. The guiding objective for good dairy farming practice

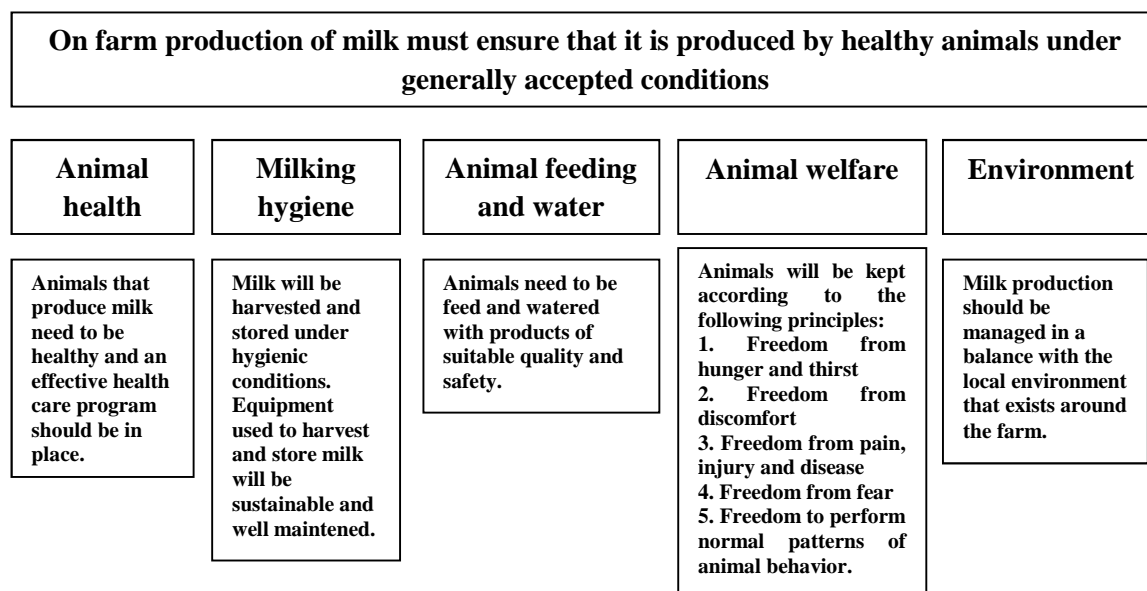


Table 1. The purchase of raw milk (litter)

Year	Federation B&H	Republic of Srpska
2010	88.306.464	75.080.400
2011	88.674.125	75.076.810
2012	100.579.225	83.876.560

(Source: Ministry of agriculture Federation BH, Republic office for statistics RS)

From table 1. is visible slightly higher purchase of milk in the Federation in relation to the purchase of milk in the Republic of Srpska.

Table 2. Number of milking cows, milk production per cow per year and total milk production

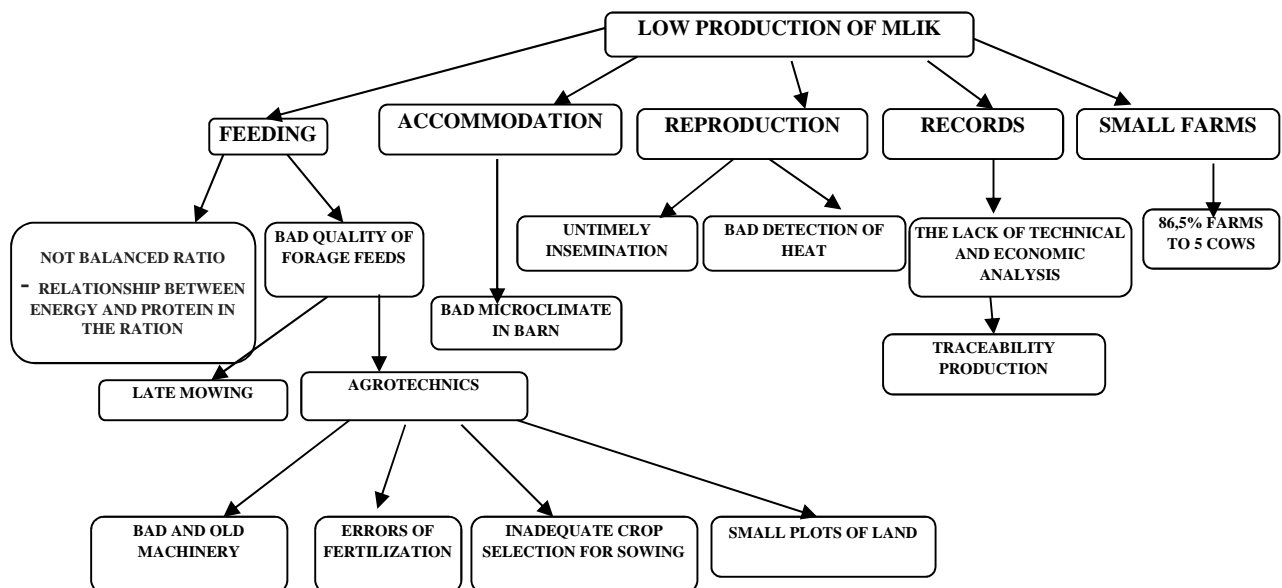
Year	Federation B&H			Republic of Srpska		
	No. cows	Milk per cow, litter	Total milk, 000 litter	No. cows	Milk per cow, litter	Total milk, 000 litter
2002	142.000	1.889	267.520	143.000	2.000	286.000
2003	153.000	1.882	278.771	131.000	2.100	275.229
2004	157.000	1.900	299.135	137.000	2.000	273.938
2005	157.000	1.947	304.895	141.000	2.232	315.029
2006	158.000	1.969	312.062	150.000	2.270	340.823
2007	150.000	2.088	313.330	145.000	2.770	401.121
2008	155.000	2.143	322.221	157.000	2.580	405.100
2009	154.000	2.163	321.096	146.000	2.800	405.183
2010	145.555	2.178	316.997	124.000	2.969	368.161
2011	140.555	2.251	315.281	120.000	2.874	344.927
2012	137.910	2.315	319.260	110.000	2.968	326.492

(Source: Federal office for statistics Federation B&H, Republic office for statistics RS)

From these table is significantly noticeable drop in the number of dairy cows since 2008. year, but it is important that the milk production per dairy cow is constantly increasing. The level of milk production per dairy cow is very low and the main factors of low milk production are shown in Scheme 2.

Slightly higher average milk production per dairy cow is in the Republic of Srpska compared to the Federation BiH.

Schema 2. Main problems in milk production in Bosnia and Herzegovina (genetic potential is OK)



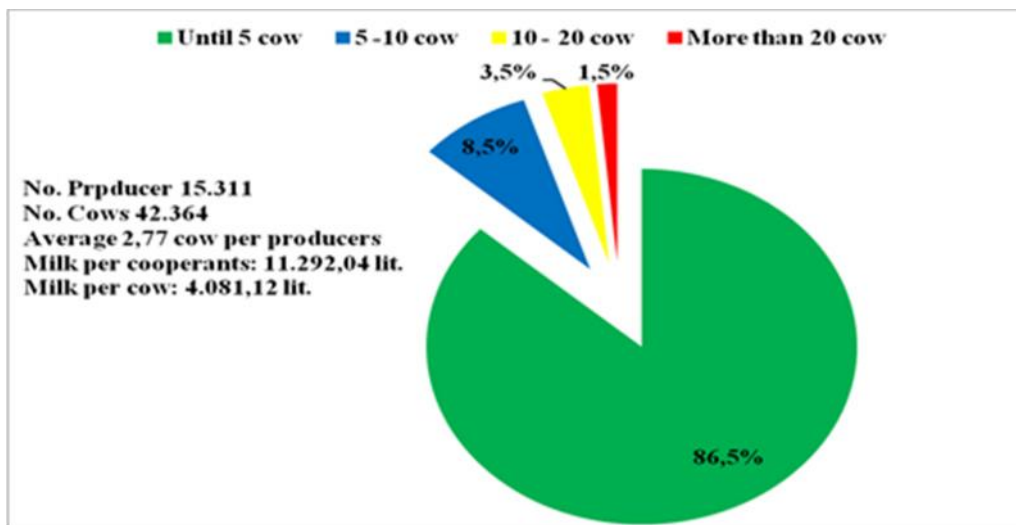


Chart 1. Information from 6 biggest dairy in BiH 2012. Year, Farm size (Source: Survey Dairy)

Based on the data obtained from our own research, the survey of six largest dairy in BiH, which purchase 86% of the total milk purchased in BiH, the data are quite different compared to the statistical data. Thus, the milk production per dairy cow is 4,081 litters and it is significantly higher than the average of the total population of dairy cows in BiH.

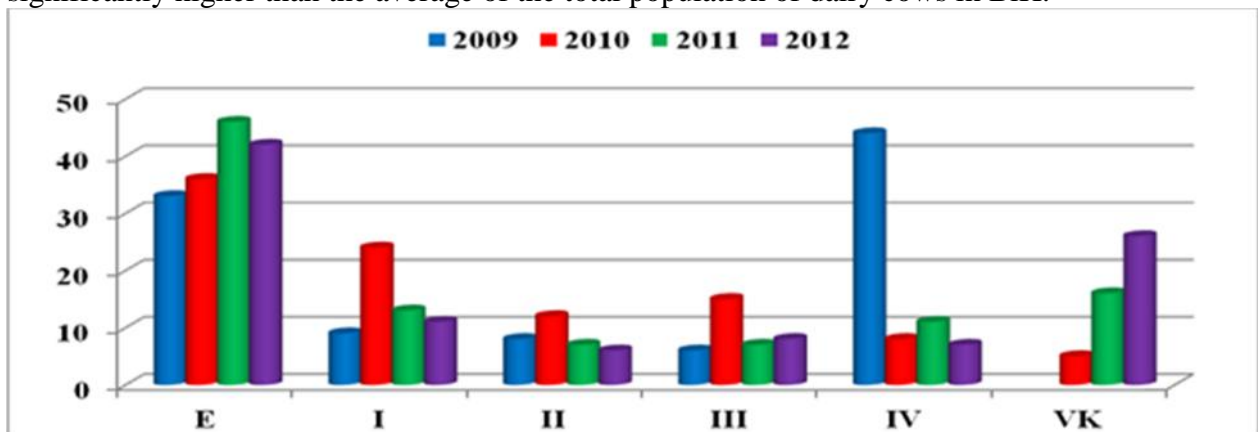


Chart 2. The quality class of raw milk (%) (Source: Survey laboratory)

Another important factor for the price of milk is milk quality (bacteria and somatic cells). According to data from four laboratories that are doing microbiological analysis of raw milk only 42% of the milk has extra class quality. Data for Croatia is that 93% of raw milk extra class.

A disturbing fact is the steadily increment of amount of milk that is classified outside of class, as a consequence of incorrect sample or results of the analysis that are unacceptable.

Conclusion

The research results suggest that milk production in Bosnia and Herzegovina in the last few years has been changed significantly. Number of dairy cows in the 2012th is lower compared to 2002. year for about 37,000 dairy cows or about 13%, and compared to 2008. , the number of dairy cows in the 2012th year decreased by 64,090 dairy cows, or 20.50%.

The amount of milk produced in the 2012th is higher compared to 2002. year for 92.232.000 liters, or 16.6%, and the total milk production in the 2012th is lower compared to 2008. year for 61,569,000 liters or 8.47%.

Milk yield per dairy cow is on a constant rise and in 2012 in the Federation of BiH is 2,315 liters, while the Republic of Srpska is 2,968 liters per year. This milk yield is lower than the world's average for about 20%, and the European average by about 55%.

The quality of the milk produced is lagging far behind the quality of the EU and is currently only 53% of the milk in the E & I class that is allowed by Regulations on the e quality of fresh raw milk in Bosnia and Herzegovina. Due to the complexity of the task, the need for consumer protection and adaptation to EU regulations, increase of quality and health safety of milk produced in Bosnia and Herzegovina is probably one of the most challenging parts of the agrarian policy in the future.

The government support was reflected in the incentives for milk per dairy cow, for the production areas and investment support. Incentives are different at the entity level.

At the level of the state or at the entity measures should be taken to protect domestic production, as well as the adoption of legislation and regulations related to the EU standards in the production, sale and processing of milk.

1. Small dairy herds, with an average of 5 dairy cows, have no motive or preconditions for business growth. Thus, the program development of milk production in B&H should be based on three categories of producers (Glavic et al. 2012.): Modern conventional production systems adapted to small farms with an average of 15-20 dairy cows in the herd. It is estimated that these farms could make an average production of 4500-5000 liters of milk per cow per year.
2. The system of specialized family dairy farms with 40 to 50 cows in the herd. On these farms it could be made production of 5000-6000 liters of milk per cow per year.
3. System of large commercial dairy farms (with more than 100 cows in the herd), which could provide more than 6,000 liters of milk per cow per year.

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