

## DAIRY PRODUCTION AND FOREIGN TRADE OF MILK AND DAIRY PRODUCTS IN BOSNIA AND HERZEGOVINA

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Dairy production and milk processing are one of the main strategies goals of agricultural sector in Bosnia and Herzegovina. Though, there is permanent growth in the last period at all levels, this sector characterizes small milk yields per dairy cow (about 2,500 kg), low percent milk collection, poor quality of fresh milk and low percent used of dairy capacity. One of limited factors for increase in the dairy sector is poor production assortment in dairies. That assortment is based on products with lower value added and the UHT sterilized milk is dominated product. There is permanent foreign trade deficit in this sector and the imported value is larger for 145 % than the imported value in 2008. The main of BH trading partners is Croatia and nearly half part value of milk and dairy products imported from this country in 2008. The main dairy export destination is Croatia with a share of 67.3 % and Macedonia with a share of 13.5 % in 2008.

**Key words:** dairy production; milk processing; Bosnia and Herzegovina; foreign trade

### ПРОИЗВОДСТВО И НАДВОРЕШНО-ТРГОВСКА РАЗМЕНА НА МЛЕКО И МЛЕЧНИ ПРОИЗВОДИ ВО БОСНА И ХЕРЦЕГОВИНА

Производството и преработката на млекото претставува стратешка цел на секторот за земјоделство во Босна и Херцеговина. Иако во последен период се бележи константен пораст на сите нивоа, секторот млекарство го карактеризираат ниски приноси по крава (околу 2.500 kg), низок процент на пазарно производство, лош квалитет на свежо и сурово млеко и низок степен на искористеност на инсталираните капацитети во млекарниците. Неповолниот произведен асортиман на млекарниците претставува еден од ограничувачките фактори за интензивен растеж во секторот млекарство. Во поголем дел се застапени производи со ниска додадена вредност, каде доминира УНТ стерелизирано млеко. Босна и Херцеговина бележи константен надворешно-трговски дефицит во овој сектор, така што вредноста на увозот во 2008 година била за 145% поголема од вредноста на извозот. Главен надворешно-трговски партнер на Босна и Херцеговина е Хрватска, од која во 2008 година е увезено околу половина од вредноста на млекото и млечните производи. Главни извозни дестинации се Хрватска, со учество од 67,3% во вредноста на извозот, и Македонија со учество од 13,5% во 2008 година.

**Клучни зборови:** производство на млеко; преработка на млеко; Босна и Херцеговина; надворешнотрговска размена

#### 1. INTRODUCTION

Dairy production is one of the most important agricultural sectors in Bosnia and Herzegovina. It is considered to be “the heart of agriculture”.

Many factors contribute to the development of this sector, the most relevant being the fact that more than 80% of the territory in the country is suitable for livestock and dairy production, large grassland areas that are not used, tradition in livestock pro-

duction, and also the fact that livestock production is the most common activity in the rural population. (Barjamović et al., 2009). Existing processing facilities in the dairy industry is also an asset for the overall production development.

Natural resources are not a limiting factor in dairy production. Bosnia and Herzegovina has more than 2.5 million hectares of agricultural land out of which 1.5 million hectares are cultivated land, and 1 million is arable land. (Vaško, Mirjanić, 2004). Only 60% cultivated land is being used, which indicates that reserves are not being sufficiently used, and that opens the possibilities for increase in agricultural production.

The livestock fund is largely decreased compared to numbers from the beginning of 1990s. In 1990 the number of cows was 623,000 (Whitelock, 2004), and in 2007 bovine livestock unit had 297,000 cattle (BHAS<sup>1</sup>, 2009). It is estimated that 100,000 households hold dairy cows and around 33,000 produce milk and earn revenue out of this production.

Total dairy production constantly increases in time, more than any other agricultural area. That increase is primarily manifested in larger number of dairy cows, milk quantity and total amount of bought and processed milk.

Primary dairy production and processing has the central role in strategic documents in all government levels in Bosnia and Herzegovina.

Many factors influence economy in this sector, the dynamics of which is tightly connected to the processes of economical and social transition of the country. Some of the factors have stronger influence on the situation and tendencies in the sector. Different agreements on the foreign trade liberalization increase the pressure of competitive foreign products. The introduction of new systems of governmental support to primary dairy production contributes to further intensification of the changes. New regulations in the area of hygiene of dairy products demand more changes in the households, which means more investments. Above mentioned factors, as well as other factors demand household owners to make more and more management decisions. Economy and hygiene demands are going to be answered mainly by larger commercial households so we can expect decrease

in the number of households that deal with fresh milk production in the future.

## 2. PRODUCTION AND MILK COLLECTING

We can see how important milk production is for the agriculture in Bosnia and Herzegovina from the fact that there is an estimate of 100,000 households that are involved in dairy production, out of which 33,000 are involved in organized buy off. A certain number of households does processing of milk into dairy products within the household itself, and they contribute through the market value of those products.

According to the available statistical data in 2008 the number of dairy cows was 297,000 (Table 1), which is 48% of the number in 1990. The last decade is characterized by initial increase in the number of live stock which lasted until 2005, and which was followed by mild decrease that lasted throughout 2008. Social programs that were realized especially in the period from 1995 to the beginning of this decade largely contributed this trend. These programs in the dairy sector were mainly based on donation of 1 to 2 breeding heifers to the households that were not oriented towards dairy production.

Table 1

### *Basic indicators of dairy production*

Year	N <sup>o</sup> of cows (000 heads)	Dairy production (000 lit)	Yield cow/lit	Total collected %
2005	315	616,895	1,958	27
2006	312	652,894	2,092	27
2007	307	714,451	2,327	27
2008	297	738,045	2,485	32

Source: BHAS

Although the number of dairy cows decreases, the total milk production constantly increases. Milk productivity of livestock is the primary reason for that fact. In 2008 it was 2,485 l (Table 1). Besides the above mentioned "selection" of the producers, the increase in productivity was also influenced by introducing contemporary technical and organizational solutions, primary in breeding, maintenance conditions and care and improvements in feeding of the cattle. The level of milk production is lower than in other countries in

<sup>1</sup> Statistics Agency in Bosnia and Herzegovina

the region and other European countries. Simental breed is the most common breed in Bosnia and Herzegovina, Serbia and Croatia. Average milk production in 2007 in Serbia was 2,663 liters (Božić, Dragica et al., 2009), and in Croatia 3,555 liters (Kovačić and Božić, 2009), while in the same year in the Czech Republic it was 7,365 liters (Boškova et al., 2009) and in Poland 4,400 liters (Szajner, 2009).

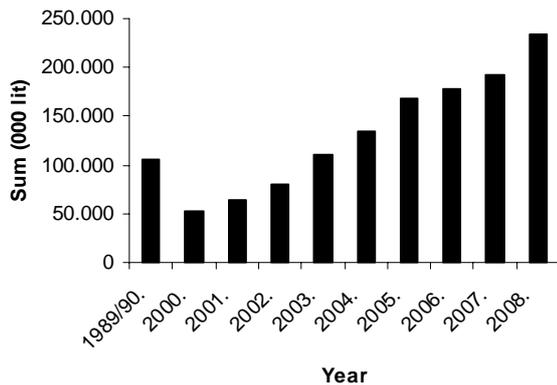


Fig. 1. Dynamics of milk collecting

Source: BHAS, Ministry of Agriculture, Forestry and Water Management

Constant growth in milk buy off (Fig. 1) resulted in increase in the market value which was 32% in 2008. Although these indicators are far from European values, progress in milk production and buy off is evident. Better use of production capacities and introduction of better organization into buy off process are the main factors that set ground for favourable trends.

The feature of dynamics in yearly supply is stressed dependence on the season of the year. As a consequence of technological process applied and involvement in organized buy off of producers with a smaller number of cattle in winter months we have drastic decreases of buy off quantities. This is very characteristic of hilly regions, and some research in the Sarajevo-Romanija<sup>2</sup> region where delivered quantities varied with the variation coefficient of 35.03 % (Vico, 2009).

### 3. MILK PROCESSING AND FOREIGN TRADE OF MILK AND DAIRY PRODUCTS

Thirty five dairies did milk processing in 2008. The total year capacity was about 400 mil-

lion liters and the usage was about 60%. Four largest dairies with daily capacity of 100,000 liters processed more than two thirds of bought off milk in 2008. Twenty one dairies have a daily capacity below 20,000 liters, and they also have poor assortment and they are focused on local markets.

Table 2

#### General milk processing structure

Product	Processing (000 lit)	%
Pasteurized milk	4,454	1.89
UHT milk	124,679	52.98
Yoghurt and other fermented drinks	52,252	22.20
Different types of cheese	45,181	19.20
Powdered milk	2,971	1.26
Other dairy products	5,808	2.47
Total	235,339	100.00

Source: Milkprocessing

The low level of use of production capacities and the limited assortment of products are contributing to the low level of competitive power of the sector. In total processed quantities, majority of products are liquid products and this kind of production structure has not changed since 2002 to great extent. UHT sterilized milk was 50% (Table 2). Improvement of the production assortment by introduction of products with a higher processing level and greater added value with better distribution of final products and a good marketing strategy are key factors to improvement of the dairy sector in Bosnia and Herzegovina.

The value of foreign trade of milk and dairy products was 184.7 million KM where import was 71% and export 29%. Constant deficit in foreign trade is noticed and coverage of import with export is merely 40.8%.

Total import in 2008 was a bit above 131 million KM (Table 3). As a consequence of unfavorable assortment in local dairies we can find more products with a higher processing level in the import structure, as well as greater added values.

While in the import structure we find different types of cheese and sour creme, almost three thirds of export is UHT sterilized milk (Table 4).

<sup>2</sup> Hilly region in central-east Bosnia

Table 3  
*Import milk and dairy products in 2008*

Product	Import (000 KM)	%
Raw milk	683	0,52
UHT milk	25.337	19,33
Yoghurt and other fermented drinks	19.495	14,87
Cream products	31.373	23,93
Powdered milk and whey	2.472	1,89
Butter products	7.419	5,66
Different types of cheese	44.311	33,80
Total:	131.090	100,00

Source: Milkprocessing

Tabela 4  
*Export milk and dairy products in 2008*

Product	Export (000 KM)	%
UHT milk	39,778	74.15
Yoghurt and other fermented drinks	338	0.63
Cream products	3,368	6.28
Different types of cheese	10,022	18.68
Other dairy products	141	0.26
Total:	53,647	100.00

Around 24% of the total processed milk in Bosnia and Herzegovina is exported. Countries in the region are main export market, and there is almost no export to the EU. EU member countries take more than 40% part in import. Croatia is the most important partner in foreign trade. In 2008 Bosnia and Herzegovina imported 65 million km worth of milk and dairy products from Croatia, and exported a bit more than 36 million KM of the same goods in return.

#### 4. CONCLUSION

Production of milk and milk processing are one of the strategic fields in agricultural and food industry in Bosnia and Herzegovina. Although constant growth is evident, the complete chain in

the dairy sector starting from primary milk production in the households through redemption to processing and market and foreign trade is not on the satisfactory competitive level. It is expected that liberalization of the international trade is going to contribute to increase the competitive pressure, and in the initial phase it is going to have negative impact on the development of this sector. Export destinations of milk and dairy products from Bosnia and Herzegovina are mostly countries in the region and there is almost no export to the countries of the EU.

In order to increase the level of competitiveness some coordinated efforts have to be taken in all the phases of the dairy chain. Except improvement in the primary production and buy off, it is necessary to have improvements in the milk processing industry through better use of existing capacities and diversity in the production assortment. In order to decrease foreign trade deficit and increase export market one of the key roles is the one of introduction of safety standards into local dairy industry.

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