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The current state of milk and dairy production in the Republic of Kazakhstan

Abstract. *The article discusses the problems of the milk and dairy products market in the Republic of Kazakhstan and the regional context. The purpose of the study is to analyze the current state of milk and dairy production, based on which the tasks are: monitoring the number of dairy cows by category of farms, analysis of milk and dairy production in the regions of the Republic of Kazakhstan, analysis of milk and dairy production, analysis of imports of milk and dairy products from the EAEU countries.*

In different years, scientists in Kazakhstan have been conducting research on this issue, but the problem remains open.

In the process of writing the article, such research methods as observation, as well as comparative and other methods of cognition are used. The information base was statistical data on the production of milk and dairy products in the Republic of Kazakhstan, as well as the work of Kazakhstani scientists.

The article analyzes the number of dairy cows, analyzes the production of milk and dairy products, analyzes the import of dairy products from the EAEU countries.

The solution to these issues will contribute to the development of the dairy products industry in Kazakhstan

Keywords: *dairy products, production, region, farm, agriculture, enterprise, raw materials.*

DOI: <https://doi.org/10.32523/2789-4320-2022-1-85-93>

Introduction

The development of agricultural formations and processing enterprises that ensure food security is very important for each state. In this regard, there is no doubt about the timely reorientation of the entire agro-industrial complex of the state to solve the tasks of ensuring the processing of raw materials and entering world markets with competitive and high-quality finished products [1]. Milk is undoubtedly of

particular importance among all animal products since it is the only product capable of providing all the necessary nutrients to young mammalian organisms. Therefore, dairy cattle breeding is a leading industry in many countries, including the Republic of Kazakhstan. Milk and dairy products are one of the main components in human nutrition, and the main task of producers is not only to obtain high milk yields, but also a high-quality product that meets the requirements of standards [2]. The quality of milk today is a

clear system of measures that prevent the cause and determine ways to eliminate possible deviations from the norm. Therefore, one of the most important tasks in obtaining high-quality milk is the creation of a feed base on feed with high nutritional value. Many so-called «defects» of milk are the result of feeding substandard, infected with pathogenic bacteria and toxigenic fungi feed. Due to errors in feeding, the smell and taste of milk may change. Some plants eaten by cows affect not only the taste and smell but also the color and consistency of milk [3] The purpose of the study is to study the current state of milk production and dairy products, as well as to identify problems hindering the development of the dairy cattle industry, based on which the tasks are set:

- monitoring of the number of dairy cows by farm categories;
- analysis of milk production and dairy products in the regions of the Republic of Kazakhstan;
- analysis of the production of milk and dairy products by categories of farms, analysis of imports of milk and dairy products from the EAEU countries.

The object of the study is dairy producers, namely the categories of farms producing milk and dairy products represented in the form of agricultural enterprises, peasants, and farms and the population producing milk and dairy products. The subject of the study is the activity of categories of farms aimed at the production of milk and dairy products. It is necessary to further improve the legislative and regulatory framework to support the market of milk and dairy products. The practical relevance of solving these problems testifies to the relevance of the study.

Methodology

The study and analysis of the development of milk production and dairy products in the Republic of Kazakhstan revealed several problems hindering its further development. By the tasks set, there were used such research methods as observation, description, analysis, and

synthesis, the method of monographic research, as well as comparative and other methods of cognition. The use of the monographic research method made it possible to substantiate and generalize the regional features of the placement of dairy processing enterprises, confirming the close relationship between the development of the dairy industry and the raw material base, as well as to identify the competitive advantages of processing enterprises of the republic.

The information base of the study is statistical data on the production of milk and dairy products in the Republic of Kazakhstan, as well as the work of Kazakhstani scientists, etc., materials of scientific conferences, normative and reference provisions. In the works of A.S. Belgibayeva and B.K. Nasyrkhanova, the problem of milk and dairy production at the regional level is considered, since the Akmola region is one of the leaders in the production of processed milk and dairy products, in their opinion, the main problem of low milk and dairy production is low technological preparation and lack of innovation among producers, the high cost of feed and the constant increase in prices for fuels and lubricants [4].

According to Zhanabiliev A.K., the problem of dairy cattle breeding today is the lack of desire among the population to engage in work in this industry, low profitability of production, and high competitiveness of imported products along with Kazakh products [5]. The problem of inefficient production of dairy products and low profitability also connects producers from Russia, according to Tarabukina T.V., the solution to this problem lies in the interaction of specialized industries and the desire of economic entities to create a transaction system that ensures maximum cost savings and profit margins [6]. Also, in the studies of scientists from Serbia Vedran Tomic, Dragan Milic, Dejan Yankovic, it was noted that the efficiency of milk production and dairy products is achieved due to the availability of technologies necessary for the production and processing of milk and dairy products, as well as the development of crop production to provide a lump base [7].

Table 1

Feeding norms of cows per 1 head, kg

Category of farms	Norms of feeding cows per 1 head, kg						
	Hay	Straw	Haylage	Silage	Concentrated feed cake	Cake, meal	Salt
Agricultural enterprises	4	-	10	25	5	3	0,13
Peasant farms	7	3	10	-	5	-	0,12
Households	8	2	-	-	3	-	0,10
Compiled by the authors based on the source [8]							

Discussion

According to the data of the Bureau of National Statistics of the Republic of Kazakhstan in the country, the rate of feeding cows per 1 head in kilograms differs sharply depending on the

categories of farms. Data on norms and types of feed are presented in Table 1 below.

As can be seen from the above table, the feed most rich in vitamins and nutrients (haylage, silage, concentrated feed cake, meal) is obtained only by cows located in agricultural enterprises

Table 2

Feed costs for dairy cows in the stall period, by category of farms, in tons

Category of farms	Number of cows	Hay	Straw	Haylage	Silage	Concentrated feed cake	Cake, meal	Salt
Feed costs for dairy cows in the stall period, by category of farms, in tons.								
The 2018 year								
Agricultural enterprises	275343	402000,8	-	1005002	2512504,9	502501	301500,6	13065
Peasant farms	1312032	1653160,3	708497,3	2361657,6	-	1180828,8	-	28339,9
Households	1989160	2864390,4	716097,6	-	-	1074146,4	-	35804,9
All categories of households	3576535	4919551,5	1424594,9	3366659,6	2512504,9	2757476,2	301500,6	77209,8
2019 r.								
Agricultural enterprises	280667	409773,8	-	1024434,5	2561086,4	891117,7	307330,4	13317,7
Peasant farms	1444508	1820080,1	780034,3	2600114,4	-	1300057,2	-	31201,4
Households	2044590	2944209,6	736052,4	-	-	1104078,6	-	36802,6
All categories of households	3769765	5174063,5	1516086,7	3624548,9	2561086,4	3295253,5	307330,4	81321,7
2020 r.								
Agricultural enterprises	287066	419116,4	-	1047790,9	2619477,2	523895,4	314337,3	13621,3
Peasant farms	1601543	2017944,2	1753689,6	2882777,4	-	1441388,7	-	34593,3
Households	2119685	3052346,4	736086,6	-	-	1144629,9	-	38154,3
All categories of households	4008294	5489407	2489776,2	1336068,3	2619477,2	3109914	314337,3	86368,9
Compiled by the author based on data stat.gov.kz [9]								

and farms, while the predominant part of dairy products (milk, sour cream, butter, cottage cheese) is produced in households or private subsidiary farms (householders). Only a third of the total volume of milk production belongs to individual entrepreneurs, peasant, and farm enterprises, as well as producers of milk and dairy products (factories), that is, specialized farms.

Below we present a table showing the feed costs for dairy cows in the stall period, by category of farms in tons for the period 2018-2020.

From the table above, it can be noted that with an annual increase in the number of cows in all categories of farms, there is also an increase in the cost of purchasing the necessary feed, while still, only in specialized farms, silage and haylage are fed to cows, consisting of juicy and semi-dried herbs, which are an effective feed base.

At the same time, the needs of dairy cows in minerals increase as their productivity increases. Coarse feed and silage usually do not contain enough minerals. Therefore, the need for them should be met through the use of premixes or special mineral salts. The quality of milk is also affected by the deficiency of vitamins B and C in the diet, and fat-soluble vitamins A, D, E should also be included, especially in winter and early spring periods. At the same time, it should be taken into account that the delivery of milk by households is carried out only in the summer, and the demand for milk and dairy products among the population is year-round. This leads to the fact that to meet the demand of the population and uninterrupted supply of milk and dairy products, factories are forced to use powdered milk for the manufacture of dairy products [10].

Table 4

Import of milk, condensed and non-condensed cream tons from the CIS countries and the rest of the world for 2018-2020

Countries	2018		2019		2020	
	Tons	US Dollars	Tons	US Dollars	Tons	US Dollars
CIS countries	51 070,5	69 091,0	52 084,0	70 838,0	63 408,5	94 948,5
Belarus	23 133,0	39 682,4	23 714,2	40 891,9	25 081,4	46 740,6
Kyrgyzstan	13 032,7	6 940,8	13 259,9	7 111,8	14 354,0	10 637,6
Russia	13 667,0	19 318,8	13 872,1	19 685,3	22 749,4	34 914,3
Uzbekistan	-	-	-	-	38,0	24,5
Ukraine	1 237,7	3 149,0	1 237,7	3 149,0	1 185,8	2 631,5
The rest of the world	8 095,4	21 667,6	8 558,9	23 272,6	12 258,0	33 617,5
Germany	5,0	15,7	5,0	15,7	0,4	1,2
Iran, the Islamic Republic of	101,7	64,4	101,7	64,4	3 512,4	6 193,3
Italy	87,5	250,5	87,5	250,5	167,4	440,8
Lithuania	2 776,1	6 549,2	2 776,1	6 549,2	2 211,5	6 351,9
New Zealand	105,0	350,6	208,5	731,8	188,8	701,4
Poland	580,0	1 707,7	820,0	2 523,4	1 321,2	4 391,0
Republic of Latvia	300,0	778,8	420,0	1 186,9	60,0	204,5
Turkey	29,6	28,0	29,6	28,0	12,5	12,3
France	3 735,0	11 029,6	3 735,0	11 029,6	3 907,7	13 470,1
Estonia	375,5	893,0	375,5	893,0	875,0	1 848,0
Compiled by the author based on data stat.gov.kz. [11]						

Table 3

Production of dairy products by categories of farms in the Republic of Kazakhstan 2018-2020, tons

Category of farms	2018	2019	2020	2019/2018 (+/-)	2020/2019 (+/-)
Agricultural enterprises	381297,5	411 151,7	463029,1	107,8	112,6
Peasant farms	1106061,6	1168283,8	1230295,2	105,6	105,3
Households	4154923,9	4240669,5	4310861,8	102	101,6
All categories of households	5642283,0	5820105,0	6004186,1	103,1	103,1
Compiled by the author based on data stat.gov.kz [13]					

Based on statistical data, in Table 4 milk, condensed, and non-condensed cream of foreign production from the CIS countries and the rest of the world are imported into the country more and more every year. This is because the main production of milk and dairy products is concentrated in the population or private subsidiary farms and is seasonal. The requirement for the quality of the milk taken by the new standards is also considered. At the same time, the demand for milk and dairy products among the population is year-round, as well as the price factor is important when buying and availability of products. After all, Kazakhstanis are not always ready to pay dearly for natural products of a domestic manufacturer, choosing favor of inexpensive and not always natural products consisting of whole milk, it can be not only milk and cream but also cheese [12].

According to the results of 2020, 6004186.1 thousand tons of milk were produced in the Republic of Kazakhstan, of which 4310861.8 thousand tons (71.79% of the total volume) were produced in private subsidiary farms. 20.49% of milk is produced by peasant farms, and agricultural enterprises produce the remaining part of milk (Table 3).

As we can see in Table 3, the average milk production in the Republic of Kazakhstan for all categories of farms from 2018 to 2020 increased by 361,903.1 tons and amounted to 6,004 million tons, there is an annual positive trend, but the number of cows from the total mass of cattle in farms and agricultural enterprises remains low.

Also in 2020, the share of milk and dairy products produced in the total republican volume of industrial production decreased from 1.1% to 0.9% in relation to 2018. Despite the increase in the supply of raw milk at the expense of households, the quality of milk remains low. This is due to the current socio-economic situation in the republic.

Results

Since 1991, collective farms and state farms have been disbanded, there has been a decline in general economic activity and a lack of jobs in villages. Many farms have low-breed cattle, carry out manual milking, and do not have cooling equipment.

The reasons for the growth of this way of life are, firstly, in the unfavorable macroeconomic conditions of agricultural production, when the increase in the tax burden on entrepreneurial activity leads to the expansion of tax-free activities in personal subsidiary farms.

Secondly, the low wages of rural workers force them to look for alternative sources of income, which is what the products obtained in private farms are.

Thirdly, the lack of jobs at agricultural enterprises, unwillingness to work for a private owner also force the villagers to engage in private farming. As noted in the economic literature, «only need forces us to practice this primitive (and if we calculate all the costs, then very expensive) and socially archaic type of production. But it is

impossible to make a virtue out of necessity and to see in the high activity of a small primitive economy a tendency to assert the dominance of private production».

In addition, the sharp progress in the development of personal subsidiary farms was facilitated by the removal of restrictions on household plots and the number of livestock in a personal farmstead during the reforms. All these reasons contributed to an absolute increase in production volumes in the households of the population and an increase in their share in the gross output of the industry in question. However, even though personal farmsteads, playing an important role in providing the population with products, for several reasons, in particular, primitive technology of production organization, cannot fully contribute today to the implementation of the main priorities of the industry development - the production of competitive products.

In comparison, in the CU countries, the share of supplies from personal subsidiary farms is slightly more than 50% of the total (Russia), and in the Republic of Belarus, this share is less than 5% (the system that operated in Soviet times has been preserved there) [14]. Almost 32% of all liquid processed milk and cream produced is accounted for in the North Kazakhstan region: 189,101 thousand tons. In addition, almost a third of the production volume is accounted for in Almaty (98,885 thousand tons) and Akmola (94,928 thousand tons) regions. In total, 65.94% of the total production of liquid processed milk and cream is produced in northern Kazakhstan, or rather in the Akmola, North Kazakhstan, and Kostanay regions.

The Kazakhstan market is filled with food products from the CU and WTO countries, and

there is a wide range of imported products on the shelves [15].

Conclusion

1. According to the conducted research, it was revealed that the feeding rate differs sharply in the categories of farms and directly depends on the material condition of the farm:

- feed consumption is higher in households in comparison with agricultural enterprises and farms, but there are no semi-dried and juicy grasses, silage in the diet of cows during autumn, winter, and spring;

- every year, with the increase in the volume of milk and dairy production, there is an increase in the import of milk, cream and dairy products;

- the main production of milk and dairy products is concentrated among the population, and has a seasonal character, as well as does not meet sanitary requirements;

2. Based on the above, to solve the problems of milk production and dairy products that are competitive with imported products from the CU and EU countries, it is necessary to combine efforts and create cooperative associations, which will allow small producers and households:

- will merge into larger enterprises with legal status and broader opportunities;

- get loans and loans without relying on subsidies from the state, which may stop at any time;

- purchase modern equipment and establish the production of milk and dairy products in your region;

- purchase and breed dairy cattle;

- produce and harvest expensive feed

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Қазақстан Республикасында сүт және сүт өнімдері өндірісінің қазіргі жағдайы

Аннотация. Мақалада Қазақстан Республикасындағы және өңірлік мәнмәтіндегі сүт және сүт өнімдері нарығының проблемалары қарастырылады. Зерттеудің мақсаты сүт және сүт өнімдері өндірісінің ағымдағы жай-күйін талдау болып табылады, оның негізінде міндеттер: шаруашылықтар санаттары бойынша сүт сиырларының басына мониторинг жүргізу, Қазақстан Республикасының өңірлерінде сүт және сүт өнімдері өндірісіне талдау жасау, сүт және сүт өнімдері өндірісіне талдау жасау, ЕАЭО елдерінен сүт және сүт өнімдері импортына талдау жасау болып табылады.

Әр жылдары Қазақстан ғалымдары осы мәселе бойынша зерттеулер жүргізді, бірақ мәселе ашық күйінде қалып отыр.

Жазу барысында байқау сияқты зерттеу әдістері, сондай-ақ салыстырмалы және танымның басқа әдістері қолданылады. Ақпараттық база Қазақстан Республикасында сүт және сүт өнімдерін өндіру туралы статистикалық деректер, сондай-ақ қазақстандық ғалымдардың жұмыстары болды.

Мақалада сауын сиырлардың басы талданады, сүт және сүт өнімдерінің өндірісі талданады, ЕАЭО елдерінен сүт өнімдерінің импорты талданады.

Осы мәселелерді шешу Қазақстанда сүт өнімдерін өндіру саласының дамуына ықпал етеді

Түйін сөздер: сүт, өндіріс, аймақ, ферма, ауылшаруашылық, кәсіпорын, шикізат.

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Текущее состояние производства молока и молочной продукции в Республике Казахстан

Аннотация. В статье рассматриваются проблемы рынка молока и молочной продукции в Республике Казахстан и региональном контексте. Целью исследования является анализ текущего состояния производства молока и молочной продукции, на основе которого задачами являются: мониторинг поголовья молочных коров по категориям хозяйств, анализ производства молока и молочной продукции в регионах Республики Казахстан, анализ производства молока и молочной продукции, анализ импорта молока и молочной продукции из стран ЕАЭС.

В разные годы ученые Казахстана проводили исследования по этому вопросу, но проблема остается открытой.

В процессе написания статьи используются такие методы исследования, как наблюдение, а также сравнительные и другие методы познания. Информационной базой послужили статистические данные о производстве молока и молочных продуктов в Республике Казахстан, а также работы казахстанских ученых.

В статье анализируются поголовье дойных коров, производство молока и молочной продукции, импорт молочной продукции из стран ЕАЭС.

Решение этих вопросов будет способствовать развитию отрасли производства молочной продукции в Казахстане

Ключевые слова: молочные продукты, производство, регион, ферма, сельское хозяйство, предприятие, сырье.

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