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PROSPECTS OF SOFT FRESH CHEESE PRODUCTION IN KAZAKHSTAN

ПЕРСПЕКТИВЫ ПРОИЗВОДСТВА МЯГКИХ СВЕЖИХ СЫРОВ В КАЗАХСТАНЕ

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Abstract. In this article, the relevance of increasing the production of cheeses on the domestic market of the Republic of Kazakhstan is shown. In accordance with changes in the structure of the population's nutrition and protein deficit, increasing attention is being paid to increasing the use of protein resources for food purposes, including the creation of new products. According to the Food and Agriculture Organization of the United Nations, the volume of world cheese production is constantly increasing. When polling the population in recent years it became clear that the cheese–curd market is waiting for the local producer. Therefore, the concept of development of low–cost cheeses remains to be topical — with high yield and accelerated maturation periods, which will be analogues of import–brand brands. The advantages of organizing the production of soft fresh cream cheese and cheese products of this type for domestic cheesemakers lie on the surface: this is a relatively new product for our market, soft cheeses have an extremely high yield, which makes their products very cost-effective, and this kind of cheese now has steady and constantly growing demand. The difference between fresh soft cheeses is that they are not pressed in production, the dairy raw material is gentle heat treatment, thanks to which useful substances remain intact in cheese. Proceeding from this, it can be concluded that the innovations and increase in the production of soft fresh cheese are real and possible and necessary.

Аннотация. В данной статье показана актуальность повышения производства сыров на внутреннем рынке Республики Казахстан. В соответствии с изменениями в структуре питания населения страны и дефицитом белка все большее внимание уделяется вопросу увеличения использования белковых ресурсов на пищевые цели, в том числе созданию новых продуктов. По данным Продовольственной и сельскохозяйственной организации Объединенных Наций объем мирового производства сыра постоянно возрастает. При опросе населения в последние годы стало понятно, что сырно–творожный рынок ждет местного производителя. Поэтому актуальной остается концепция разработки сыров пониженной

себестоимости — с высоким выходом и ускоренными сроками созревания, которые будут являться аналогами импорт–брендовых марок. Преимущества организации производства мягких свежих крем–сыров и сырных продуктов такого типа для отечественных сыроделов: это относительно новый для рынка Казахстана продукт; мягкие сыры имеют чрезвычайно высокий выход, что делает их производство рентабельным; данный вид сыра имеет устойчивый и постоянно спрос. Отличие свежих мягких сыров в том, что при производстве их не прессуют, молочное сырье проходит щадящую тепловую обработку, благодаря которой в сырах сохраняются в полезные вещества. Исходя из этого, можно сделать вывод, что новшества и повышение производства мягкого свежего сыра реально, возможно и необходимо.

Keywords: dairy product, soft fresh cheese, production, technology, import substitution.

Ключевые слова: молочный продукт, мягкий свежий сыр, производство, технология, импортозамещение.

Introduction

In accordance with the Program Industrial and Innovative Development of Kazakhstan — 2020, the future of the country is closely linked with the development of processing branches of the agro–industrial complex, and especially with the development of technologies for deep processing of agricultural raw materials into high–quality competitive domestic food products.

At the present stage, the dairy industry in Kazakhstan is characterized by a deep decline in the domestic production of hard and semi–solid cheeses. According to the Agency for Statistics of the Republic of Kazakhstan for January–December 2016 in the country produced 5186.2 thousand tons of milk, of which: milk processed liquid and cream — 335 946 tons, cream butter — 14 220 tons, cottage cheese and cheese — 16 579 tons (1450 tons), other dairy products — 158 728 tons [1].

Improving the quality of cheeses and improving the economic performance of their production is facilitated by the use of such technological methods and biotechnological means as the use of increased pasteurization temperatures and double thermal processing of milk in combination with the maturation of milk with a special ferment, the regulation of the mineral composition of milk, the use of new enzyme preparations.

The main factors that determined the high level of development of world cheese production are: high–quality raw materials, high density of its production and an increase in this base of a single capacity of cheese–making enterprises, minimum seasonal fluctuations in milk purchases, efficient technologies, consistently high quality of finished products, the cost of which allows it to be sold at prices the growing demand, the technological level of technological equipment.

To date, the development of the cheese market requires constant improvement of existing methods of its production and the search for new technological solutions. In Kazakhstan, the growth in sales of cheeses is limited by the purchasing power of the population. Therefore, the concept of developing low–cost cheeses — with high yield and accelerated maturation — remains topical. In this case the cheese should be stable in storage.

These conditions are largely met by a group of cheeses with a high level of lactic fermentation. Their technological features allow to level out the low quality of raw materials, which at the moment is a serious problem for domestic cheese making. It is also necessary to take into account taste habits of consumers: cheese should have high organoleptic characteristics, close to the traditional characteristic for hard cheeses.

Currently, the range of cheeses produced is quite wide. All the variety of cheeses produced abroad, by many authors, is proposed to be classified according to the following characteristics: the

type of raw material and its properties; composition of microflora involved in the production of cheese; parameters and conditions for carrying out the technological process; composition and properties of the finished product. From the whole range of cheeses it is possible to distinguish two most significant and widespread groups of cheeses: solid rennet cheeses with a high temperature of second heating and hard rennet cheeses with low temperature of second heating.

According to the Food and Agriculture Organization of the United Nations, the volume of world cheese production is constantly increasing. This is explained by the following reasons:

- the spread of the Western habit of eating out of the house;
- development of the tendency to consume less milk in liquid form (in particular, in large settlements), accompanied by an increase in the consumption of cheeses;
- Strengthening the image of cheese as a natural food product that meets the consumer's desire to purchase products that are close to nature, real;
- Advertising activities in the field of dairy products.
- development of a healthy lifestyle and proper nutrition in the Republic of Kazakhstan.

It can be unequivocally determined that the growth of the economic well-being of the population leads to an increase in the consumption of cheeses, this is noted both at the level of individual countries and at the level of different social strata within the individual country.

Currently, the most popular types of cheeses in the world market are hard and semi-solid cheeses, whose production accounts for 54% of the total. Due to some of its features, cheese can be considered an indicator of changes in the economy and the welfare of the population.

On the one hand, it was never a product of first necessity, on the other, it has long become a familiar and favorite product.

Recently, the demand for traditional cheeses has stabilized, and the elite varieties have started to increase. This is due, first of all, to the growing prosperity of citizens who prefer to buy quality cheese. Given the specifics of the domestic market, cheeses in terms of consumption can be divided into three groups: basic, elite and additional.

a) The main group (basic assortment). This group includes cheeses that are in high demand. These are hard and processed cheeses.

b) Elite group. This group includes expensive cheeses bought in small volumes. These are some types of soft cheeses and cheeses with mold. Demand for elite cheeses is low and mainly concentrated in large industrial and administrative centers.

c) Additional group. This group includes cheeses, which are intermediate between the cheeses of the basic assortment and cheeses of the elite group. Basically, this cheese of imported origin Camembert, Maasdam, Parmesan, etc.

The world science of nutrition recognizes cheese as a highly nutritious, biologically complete, easily digestible product. It is an indispensable and indispensable component of the human food diet. In recent years, industry has moved to the sale of products under direct contracts with the consumer. The changes in the relationships between milk producers, dairy industry and trade, as well as the need for a sharp increase in the production of cheeses, pose challenges in the search for rational technologies, assortment and schemes for organizing their production.

The main ones are the smoothing of seasonality in the production of cheeses and the creation of technologies with reduced production cycles.

In accordance with changes in the structure of the population's nutrition and protein deficit, increasing attention is being paid to increasing the use of protein resources for food purposes, including the creation of new products. The full value of such products is determined not only by the amount of protein, but also by its quality. Therefore, the food industry develops a tendency to enrich the products with a useful, easily digestible protein.

Among protein milk products, the main place is occupied by cheeses, which are of primary importance for their biological properties, they are well absorbed by the human body and have the highest energy value. The issue of cheeses in our country is currently insufficient and does not meet the recommended norms of consumption. Therefore, increasing the production of cheeses is one of the main tasks of the dairy industry.

Fresh cheeses are conventionally divided into three groups: brined cheeses (mozzarella, ricotta, mascarpone, feta, brynza), tender cheeses from goat's or sheep's milk (chevron) and homemade cheeses (ystoleypa, panir) (1).

Pickle cheeses are very popular as an additive to dishes — so, feta is an indispensable component of Greek salad, and mozzarella is one of the ingredients of real Italian pizza. Delicate cheeses made from goat and sheep milk often serve as table decorations as light snacks. A homemade cheeses are a delicious fresh breakfast, or a dessert dish, which it is customary to use with sweet.

The difference between fresh cheeses is that they are not pressed during production, the dairy raw material undergoes gentle heat treatment, thanks to which useful substances remain intact in cheese. Some fresh cheeses do not even need to add rennet. Another advantage — in many fresh cheese salt as a preservative is added in a minimal amount, which shortens the period of their storage. Therefore, it is recommended to store fresh cheeses not longer than a week, a maximum of two.

Because of the delicate consistency, fresh cheeses are often packed into small forms and molds. The finished cheese can be in the form of a circle or eggs (Italian mozzarella), a rectangle (feta, cheese), a cone or a truncated pyramid (French goat chef), flat cakes (Finnish souvenir), etc.

As for other types of cheese, cow, goat and sheep's milk or a mixture of them are used to make fresh cheeses. If cheese needs to be given an acuity or a specific smell, then only sheep's milk is taken — its fat contains a lot of caprylic and capric fatty acids, to which sheep's milk is owed its specific odor. In addition, it is more fatty compared to cow and goat (seven to ten percent fat) and contains more proteins.

Goat's milk is superior to cow's milk by the content of calcium, phosphorus, vitamins C, B₁, B₂. Because of this, it is considered curative and is an indispensable product for a variety of diseases — from gastritis to vitamin deficiency.

The Nordic peoples and the inhabitants of the Scandinavian countries use milk for the preparation of cheese. In comparison with the cow it is very fat, thick as cream and somewhat tart. To drink it in its pure form is not particularly pleasant, but the cheese from such milk turns out to be unusually tasty and nutritious. For example, in Finland, such a traditional soft home cheese is a souvenir (cheese bread), which is similar in shape to a flat cake, and during cooking it goes through smoking until it forms a dark crust. It is very tasty to eat with berry dessert — in Finnish supermarkets, the souvenir is often sold complete with a jar of cloudberry jam. Due to the fact that this cheese is not stored for a long time, it is practically not imported.

Over the period January–May 2017, compared with the same period last year, there was a decrease in imports of basic food products, like milk processed by 13%, vegetable oil, cheese and cottage cheese by 10%. Accordingly, these products show an increase in production and a gradual import substitution (2).

When polling the population in 2016. it became clear that the cheese–curd market is waiting for the local producer. Kazakhstan companies increased output by 7.4% per year, but they still provide only slightly more than half of the demand.

At 44.5%, the sector is still closed by importers, although the volume of imported products decreased by 4.4%.

By results of three quarters in the Republic of Kazakhstan 18.2 thousand tons of cottage cheese and cheese were produced — by 7.4% more than in the same period of the last year. At the same time, demand grew by 1.8% to 32.8 thousand tons, of which 31.8 thousand tons were for domestic consumption (2.4% per year), and another 0.9 thousand tons was sent for export (–14.4%).

Thus, own production closed 55.5% of demand (at the end of 2015 it was 57.8%), and the segment was in great need of import substitution.

It is noteworthy that exports fell after a record growth last year.

Table.

CHEESE AND COTTAGE CHEESE PRODUCTION

<i>Year</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>
% — share of demand	45.7	51.9	50.4	57.8	55.5
Production in thousands / tons	19.2	22.1	22.2	30.1	18.2

Import amounted to 14.6 thousand tons in January–September 2016 (minus 4.4% compared to the same period in 2015) — it is 44.5% of demand. By the end of 2015, the share of imports from the total volume of used products was 40.7%.

Work on import substitution is already underway. So, for 3 years the production capacity increased by more than a third (+35.2%). At the end of 2015, they amounted to 58.6 thousand tons.

To date, all soft and cream cheese such as Mascarpone and Philadelphia, which are represented in our market — foreign production. This fact makes interesting the production of such products at home, as it will be quite difficult for importers to compete with local producers.

The advantages of organizing the production of soft, cream cheese and cheese products of this type for domestic cheese producers lie on the surface:

–This is a relatively new product for our market.

–Soft cheeses (such as feta) and, in particular, cream cheese have an extremely high yield, which makes their production very cost-effective.

–Soft cheeses now have a steady and constantly growing demand. The share of these cheeses is constantly increasing and this trend will continue. Like cream cheese, white cheese for salads, cheese cheeses confidently conquer our market.

–Considering our current realities on the supply of producers with natural raw materials, soft cheeses can now be produced from recombined (reconstituted) milk raw materials: milk powder, dried cream (3).

Conclusion

Growth in the well-being of the population and the influence of Western markets have made changes in the diet of Kazakhstanis: the consumption of enriched products of the dairy industry, and in particular cheeses, is increasing. These quantitative and qualitative changes cause the development of domestic developments, the attraction of the experience of foreign production technologies and the use of modern high-tech ingredients.

Cheese is one of the most useful and easily digestible consumer products derived from milk. The popularity of cheeses is explained by their high biological and nutritional value, which is due to a successful combination of essential amino acids, a high calcium content and a wide range of trace elements, an easily digestible form of milk fat, a pleasant flavor bouquet.

Based on the above analytical review, it can be concluded that the innovations and increase in the production of soft fresh cheese is real and possible and necessary. It has several significant advantages:

–a rich resource base, which makes it easy to introduce a new product, which at the moment is popular and satisfies the diverse tastes of the consumer;
–almost complete absence of harmful and not acceptable preservatives in the finished product
–Rich in vitamins and macronutrients, the composition of raw materials, which will provide the population with a functional end product, rich in vitamins, beneficial microelements and natural antiseptics.

Accordingly, it can be concluded that the product will be in demand on the market, and its introduction will provide an opportunity to attract the agricultural branch to a new milk sales in large quantities, as well as to develop the cheese sector of the Republic of Kazakhstan in a new direction and to provide the opportunity to organize new jobs for the population.

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