Ways to improve the competitiveness of dairy cattle in the Russian Federation

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Abstract. Import dependence on livestock products in 2017 amounted to more than 23%, while the share of domestic livestock products in the market did not exceed 81%. A systematic study of various aspects of improving the competitiveness of dairy cattle breeding in Russia has allowed us to develop a theoretical and methodological basis for studying this problem. Based on the economic essence of the concept of “competitiveness,” we believe that only with the profitable management of the industry as a whole, one can raise the question of the competitive advantages and competitiveness of each type of livestock production. Through a detailed costing, the degree of influence of internal and external factors that ensure the competitive management of the industry is determined, and the main factors constraining the realization of the natural competitive advantages of domestic livestock farming under current conditions are considered. Conceptual solutions to improve the competitiveness of the production of milk, beef, and breeding products are proposed, ensuring the industry’s withdrawal from the state of stagnation. A set of new government regulatory mechanisms has been developed that have an effective impact on improving the competitiveness of domestic producers of animal products. The consistent state policy pursued by the Department of Animal Husbandry and Breeding of the Ministry of Agriculture of Russia in the field of dairy cattle breeding led the industry to competitive positions in all product areas. However, to increase profitability and develop domestic dairy cattle breeding through expanded reproduction, it is necessary to further improve the legislative framework for solving urgent problems, including the proposals developed in the L. K. Ernst Federal Science Center for Animal Husbandry.

Russian cattle breeding is under the influence of both internal and external competition. In this regard, it is necessary to create an effective mechanism of state influence aimed at improving the competitiveness of domestic livestock. Building competitiveness is considered by us not as a goal, but as a result of the development of domestic cattle breeding. Modern dairy cattle breeding is a complex multi-product system, which requires a single algorithm for assessing competitive advantages for both individual products and the industry as a whole.

The main problem of domestic cattle breeding, which does not allow the industry to be recognized as competitive, is that the total production costs greatly exceed the income from the sale of marketable products. According to the summary reporting of indicators of financial and economic activities of agricultural organizations, the share of milk is more than ¾ in the total revenue from sales of dairy cattle products [1].
But milk in unprocessed form is not a commodity item on the world market. Therefore, the main criterion for assessing the competitiveness for milk producers is the cost of its production. The production cost of milk, calculated on the basis of official data of state bodies and sectoral associations of foreign countries, taking into account the average annual exchange rate, clearly indicates that domestic producers in 2016 have lower prices than farmers from Western Europe (39-43%) and Canada (53%)[1-4, 15].

The cost is directly dependent on the organizational, economic, industrial, and climatic factors. Favorable climatic and technological conditions for the development of cattle breeding in the countries of Oceania and Latin America, due to the presence of a significant number of pastures and a long temperature regime favorable for animals, allow using the year-round grazing cattle. This makes it possible, with the lowest operating costs and management costs, to continuously increase the production of milk and its processed products, occupying key positions in the global dairy market. Production volumes also affect global competitiveness.

The dynamics of changes in the cost of milk production in Russia compared with other countries indicates a rapid increase in the competitiveness of domestic dairy cattle breeding, mainly due to the past devaluation of the national currency. The almost twofold depreciation of the national currency led to the fact that the cost of milk production in Russia was significantly lower compared with the main competitors in the foreign market. In terms of unit costs, domestic agricultural enterprises are second only to American milk producers, surpassing farmers in Europe and Canada, gradually strengthening their competitive advantage in the overseas market and losing in the domestic.

The main reason for this is the rapidly declining profitability of the industry. Under the influence of external and internal factors, the problem has become systemic. For example, the profitability of milk sales for 2 years fell from 15.8% to 9.6%, which is connected with the outpacing rates of cost growth relative to the growth rates of the sale price of milk (17.5% against 11.2%). In the absence of the state policy in the pricing system in the food market, the scale of redistribution of income from the agricultural sector to the processing industry and the sphere of circulation is constantly increasing. If the agricultural producers and the processing and circulation sphere received 2.43 rubles, 3.80, and 4.96 rubles on each liter of milk, respectively, in 2014, then this ratio changed dramatically in 2016 – 1.73 rubles, 4.44, and 7.03 rubles, which was not in favor of the farmers (Table 1).

Table 1. Structure of costs and revenues by participants of the dairy subcomplex in the Russian Federation.

| Milk subcomplex       | Share in total costs, % | Profit per kg of milk sold, rub. |
|-----------------------|-------------------------|---------------------------------|
|                       | 2014  | 2015  | 2016  | 2014 | 2015  | 2016  |
| Agricultural producer | 49.2  | 49.6  | 50.3  | 2.43 | 1.92  | 1.73  |
| Recycling             | 39.7  | 39.0  | 38.3  | 3.80 | 3.46  | 4.44  |
| Scope of treatment    | 11.1  | 11.4  | 11.4  | 4.96 | 6.04  | 7.03  |

At the same time, the dairy subcomplex of our country as a whole, with an acute shortage of domestic milk in the market (the level of self-sufficiency at a consumption rate of 325 kg in 2016 was 57.9%), is consistently profitable, but not for all its participants. In 2016, for the whole dairy subcomplex, all its participants received 13.2 rubles for each kilogram of sold milk. But the main part of the surplus product produced in dairy cattle breeding is redistributed through the price system in favor of the processing and retail enterprises.

The movement of marketable products occurs from the manufacturer to the buyer; however, the terms of sale and pricing policy are dictated in reverse. As a result, processing and trade, as central units, have advantages in the form of a monopoly position: setting procurement, wholesale and retail prices have a targeted impact on financial flows and thereby form the most favorable conditions for profit [5].
The initial link in the product promotion chain (that is, the agricultural producer) remains to either accept the dictated conditions and incur losses, or reduce its share of products in the domestic food market, which is the main cause of the continuing reduction in livestock. In addition, the farmer has no opportunity to influence the “purchase” prices, which are set to him after the products are produced, and the main costs are made long before its realization [6].

As a result of the price imbalance in dairy cattle breeding, a paradoxical situation has arisen: on the one hand, farmers have great difficulty in selling products (milk marketability in all categories of farms is 65%). On the other hand, there is a shortage of own dairy products in the retail market to meet the paid demand.

One of the ways to resolve these contradictions, in our opinion, can be the introduction of state regulation in setting purchasing, wholesale, and retail prices for dairy products [7] on the basis of a single “rate of return” for all participants in the food sub complex. This measure would ensure the expanded reproduction in the industry by increasing the profitability of milk sales by 24% without increasing the retail prices for the most important socially important dairy products for the population.

For the practical implementation of the mechanism aimed at equalization of the profit rates, the employees of the L. K. Ernst Federal Science Center for Animal Husbandry at the parliamentary hearings “Legal Aspects of Increasing the Profitability of Agricultural Production,” which took place in the State Duma, proposed a legal procedure for the progressive taxation of excess profits obtained from understating procurement and overstaying wholesale and retail prices [6].

The second most important commodity product for dairy cattle breeding is beef (Table 2).

Table 2. Formation of the domestic market of beef.

| Indicator                                | 2014   | 2015   | 2016   | 2017   |
|------------------------------------------|--------|--------|--------|--------|
| Production, thousand tons                | 1654.1 | 1649.4 | 1619.0 | 1618.6 |
| Import, thousand tons                    | 629.6  | 435.3  | 363.9  | 358.7  |
| Import substitution, thousand tons       | 51.8   | 189.6  | 41.0   | 4.7    |
| Import dependence, %                     | 38.1   | 26.4   | 22.5   | 22.2   |
| Export, thousand tons                    | 1.517  | 2.216  | 2.126  | 2.546  |
| Share of exported products, %            | 0.09   | 0.13   | 0.13   | 0.16   |
| Foreign trade balance, thousand tons     | -628.1 | -433.1 | -361.8 | -356.1 |
| Export share in foreign trade turnover, %| 0.24   | 0.51   | 0.58   | 0.70   |
| Capacity of the domestic market, thousand tons | 2282.2 | 2082.5 | 1980.8 | 1974.7 |
| Paid demand, billion rubles              | 320.6  | 361.9  | 349.3  | 348.6  |
| The share of domestic products in the domestic market, % | 72.4   | 79.1   | 81.6   | 81.8   |
| Consumption per 1 person per year, kg    | 15.7   | 14.2   | 13.5   | 13.4   |
| Production per 1 people. per year, kg    | 11.4   | 11.3   | 11.0   | 11.0   |
| Self-sufficiency at a consumption rate of 20 kg, % | 57.1   | 56.3   | 55.2   | 55.1   |
| Average prices of agricultural producers, thousand rubles / t | 130.5  | 163.7  | 169.4  | 171.2  |
| Average prices of import contracts, thousand rubles / t | 166.7  | 211.9  | 207.1  | 200.9  |
| Average prices of export contracts, thousand rubles / t | 223.4  | 269.9  | 304.2  | 331.2  |

According to the Ministry of Agriculture of Russia in 2017, the share of specialized beef and crossbred cattle in the cattle production structure for slaughter in farms of all categories accounted for only 16% [9]. As for dairy products, in the domestic market of beef paid demand significantly exceeds the supply of domestic beef cattle. In the conditions of an open economy and free trade, domestic beef cattle due to high production costs of growing products cannot yet compete on the domestic market in price competition with foreign producers. Low prices set by processors for the purchase of livestock from agricultural producers have for a long time been making beef production a deeply unprofitable
activity. Moreover, the prices of import contracts for the supply of beef from abroad are 15–20\% higher than the prices offered to agricultural producers.

It is absolutely clear that such an approach of processors does not stimulate domestic pastoralists to conduct an expanded reproduction and solve import substitution problems. The largest processors monopolizing the domestic market, being at the same time importers of agricultural raw materials and foodstuffs, in the absence of competition, arbitrarily set high rates of profit for themselves, thereby limiting consumer demand for final products [10]. And, as a result, instead of increasing the production potential of domestic cattle breeding and increasing the volume of output, there is a constant increase in consumer prices, which does not affect the growth of profitability of agricultural producers, reduces the demand for products and their efficiency.

Domestic beef is practically not represented on the world market. The share of exported beef from all produced in the country in 2017 was only 0.16\%. The high cost of meat production and, as a result, the “export offered” price determined its low competitiveness. Therefore, it is premature to raise the question of the export orientation of the industry. But the export of beef is needed as a mechanism to increase the sustainability of the industry and create prerequisites for expanded reproduction through the realization of “absolute” and “comparative” advantages. Since it is the development of industries with competitive advantages and free trade exchange that ensure the growth of general welfare.

The level of export prices for domestic beef was always higher than imported ones, and this difference was almost 65\% in 2017. High prices and the annual increase in the share of exports in foreign trade indicate that the beef produced in our country is quite competitive in the world market in terms of quality indicators.

One of the ways to improve the profitability of beef production is the integration of producer farms and meat processing plants, or the organization of its own processing [11]. Such enterprises are quite able to become competitive in the current system due to the absence of intermediate stages in the chain of product promotion to the consumer, which will avoid additional costs in the form of taxes (mainly VAT) under different tax regimes, unreasonable overstatement of profits and, as a result, will lead to a decrease in retail prices in the consumer market. At the same time, the agricultural producers themselves will be able to set the selling price, focusing on their own costs and direct profits to the development of cattle breeding. To create a competitive environment, we propose to stimulate cattle farms through the introduction of state subsidies to cover at least 50\% of the cost of purchasing and installing modular enterprises for slaughtering and primary processing of meat products.

For contemporary dairy cattle breeding, the third most important product is the sale of pedigree cattle. According to the appraisal data for 2016, almost 28\% of dairy cows in the productivity of agricultural organizations and peasant farms have the status of breeding animals (Table 3).

Table 3. Development of pedigree dairy cattle breeding.

| Indicator                                           | 2014     | 2015     | 2016     | 2017     |
|-----------------------------------------------------|----------|----------|----------|----------|
| Uterine livestock breeding cattle, thousand heads   | 884.8    | 909.5    | 958.0    | 1042.1   |
| Breeding sale, thousand heads                       | 70.2     | 64.7     | 61.9     | 75.4     |
| Permitted first heifers, thousand heads             | 317.7    | 352.3    | 393.3    | 454.1    |
| including own reproduction                          | 208.7    | 258.8    | 304.0    | 321.7    |
| purchased                                           | 109.0    | 93.5     | 89.3     | 132.4    |
| of which are imported                               | 39.3     | 29.7     | 28.4     | 58.9     |
| Eliminated cows, thousand heads                     | 323.8    | 327.6    | 344.8    | 370.0    |
| Produced breeding products, thousand heads          | 278.9    | 323.5    | 365.9    | 397.1    |
| Export of breeding heifers, thousand heads          | 0.5      | 0.9      | 1.0      | 1.9      |
| Import dependence, %                                | 14.1     | 9.2      | 7.8      | 14.8     |
| Import consumption, %                               | 12.4     | 8.4      | 7.2      | 13.0     |
The share of imports in the domestic market of breeding livestock, %

|                  | 36.1 | 31.8 | 31.8 | 44.5 |
|------------------|------|------|------|------|

The change in the volume of production of breeding products for the year, thousand heads

| Import, thousand heads | 42.6 | 44.6 | 42.4 | 31.2 |
|------------------------|------|------|------|------|
|                        | 0.1  | -9.6 | -1.3 | 30.5 |

Import substitution, thousand heads

|                        | 42.5 | 54.2 | 43.8 | 0.7 |

Self-provision with breeding products, %

|                  | 86.1 | 98.7 | 106.1 | 107.3 |
|------------------|------|------|--------|-------|

* Data came from the Federal Customs Service of the Russian Federation.

It is incumbent on the breeding farms to grow heifers and sell pedigree livestock, which is the production of “means of production: and the basic element in the technological chain of expanded reproduction in the dairy cattle breeding.

In the pedigree dairy cattle breeding, an annual increase in the main production over 4 years was observed at 17%, which ensured import substitution for this period in the amount of 35.3 thousand heifers on average per year. Breeding resources of the leading dairy cattle breeds in breeding farms not only provide simple reproduction, but also have sufficient livestock of heifers for domestic sale and export supplies [12, 16]. At the high rates of import substitution, which were observed in the breeding dairy cattle breeding, the share of domestic heifers in the domestic market is still 55.5%. Until 2016 (inclusive), the share of imported heifers in the domestic market was constantly decreasing, while the share of imported first-calf heifers in breeding farms decreased to 7.2%. On the contrary, self-sufficiency increased and in 2016 and amounted to 106.1%.

The lack of development of the domestic market for breeding products, in our opinion, is largely due not to limited supply, but to the lack of paid demand for domestic breeding cattle. According to the Ministry of Agriculture of the Russian Federation, the average cost of increase in fattening of cattle in 2017 rose to 170 rubles, and when growing breeding heifers, the cost per unit of live weight is even higher; therefore, in breeding organizations selling heifers for 4-7 months of pregnancy by price below 130 thousand rubles for the head is considered economically inexpedient.

At the same time, the state provides significant preferences to buyers of imported breeding cattle in the form of cancellation of the import tariff [13]. The purchase of animals under import contracts on the terms of delivery “DAP Incoterms 2010” makes the purchase of large quantities of cattle more profitable abroad, and the Russian dairy cattle breeding on the domestic market is uncompetitive compared to the cattle of imported breeding. Moreover, since 2017, when purchasing imported breeding livestock, a zero value-added tax rate was established, this in fact reduced the cost by 10%. For this reason, in 2017, the import of dairy heifers increased by more than 2 times and amounted to 58.9 thousand heads. If in previous years, the share of purebred breeding cattle in total imports was 35–50%, it rose to 96% in 2017.

Over the year, such preferences allowed foreign producers of purebred breeding cattle to increase their incomes by 78.8% due to exports to Russia of products in the amount of $ 144.5 million, while our country’s budget did not receive 843 million rub. in tax payments and fees.

Very high costs for the cultivation of breeding heifers, paying off at a selling price of at least 255 rubles per 1 kg of live weight, make domestic breeding cattle uncompetitive. In 2017, breeding farms sold only 75.4 thousand heifers, including 1.9 thousand heads exported. Moreover, the prices of export contracts for the supply of heifers actually equaled the prices of breeding animals on the world market. This suggests that domestic breeding cattle is competitive in the external market.

As an organizational and economic mechanism to address the current problems of the formation and development of the domestic market for pedigree livestock, it is necessary to develop a long-term strategy of state protectionism in relation to the domestic producer of pedigree products [14]. We propose under the State Program for the Development of Agriculture and Regulation of Agricultural Products, Raw Materials and Food Markets for 2013–2020 to provide compensation for the costs of purchasing domestic breeding animals of at least 110 rubles for 1 kg of live weight.
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