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# Role and Importance of Turkey Meat Production in Poultry Farming in Russia: Prospects for Further Development

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## ABSTRACT

In modern conditions, against the background of the negative impact in the form of sanctions on the Russian economy the retaliatory measures on the part of the Russian authorities contributed to a significant decrease in the number of food imports to the Russian market. In this regard, the problem of ensuring the food security of the country is significantly actualized. Consequently, a justified assessment of the role and place of certain types of agricultural products in the development of food markets is required. Since the beginning of the 2000s, Russia has been gradually recovering the sphere of turkey meat production. This type of poultry product has high dietary and taste properties, is a source of high-quality proteins, and contains a large number of useful elements and vitamins. In this regard, the purpose of this paper is to assess the role and importance of turkey meat production in the total volume of poultry meat production as a whole and to develop, based on the data analysis, directions for the further progressive development of this sphere of agricultural production.
The paper provides a comparative analysis of the indicators of the Russian turkey meat market with similar indicators of the poultry meat market as a whole, identifies the reasons for such a significant lag in the turkey breeding sector from the poultry industry in the country as a whole, and outlines the main directions for overcoming the critical situation in the sub-industry.

**Keywords:** Turkey meat market, Per capita consumption of turkey meat, Financial stability, Debt load, Agro-industrial integration.

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## INTRODUCTION

One of the most useful types of meat products is turkey meat. It is characterized by a high content of such important microelements as phosphorus, potassium, magnesium, zinc, and iron, which has a positive effect on the human immune and nervous system [1, 2]. Turkey meat differs from other types of poultry meat by a balanced content of fats and easily digestible proteins, which further increases the dietary value of this type of meat product [3, 4]. Turkey meat has also high-quality taste parameters [5, 6]. Consequently, this type of agricultural product can be important in strengthening the food security of the country [7, 8].

## MATERIALS AND METHODS

In the process of working on this article, the following research methods were used:

observation, economical and statistical methods, and vertical balance analysis.

## RESULTS AND DISCUSSION

Industrial production of turkey meat in Russia has been carried out since the early 1960s. The main regions of operation of enterprises in the sphere of agro-industrial production under consideration were the Stavropol and Krasnodar Territories, the Voronezh, Kaluga, and Saratov Regions. In the 1990s, in the process of implementing market reforms, the industrial production of turkey meat in Russia was practically curtailed, only in the conditions of personal farmsteads and individual private (family-operated) farms in the North Caucasus and southern Russia, turkeys were bred for personal consumption.

Since the beginning of the 2000s, there have been tendencies towards the recovery of the poultry industry we are studying. The still weak market saturation makes this sphere of agricultural production one of the most promising subsectors in Russian agriculture at present, which allows attracting significant volumes of bank financing to this sphere of production, mainly on a long-term basis. The high potential of the market in combination with active lending from the banking sector and imperfect antimonopoly legislation created the necessary prerequisites for the formation of holding-type organizations in the field of turkey meat production, actively using advanced foreign technologies for growing turkeys.

Let us now review the main rates of development of the market for turkey meat and the role it plays in the development of the common market for poultry meat in Russia.

As can be seen from the data in **Table 1**, during the time interval under consideration, the physical volume of turkey meat production increased by more than 57 times and amounted to 288.09 thousand tons.

**Table 1.** Indicators of the Market for Turkey Meat in Russia.

| Years | 2005 | 2007 | 2009 | 2011 | 2013 | 2015 | 2017 | 2019 | 2019 in% to 2005 |
|---|---|---|---|---|---|---|---|---|---|
| Poultry meat produced in total, thousand tons | 1,388 | 1,925 | 2,555 | 3,000 | 3,600 | 4,541 | 4,941 | 5,060 | 3.7 times |
| including turkey meat, thousands of tons | 5 | 36.9 | 41.6 | 65 | 98 | 150 | 233 | 288.09 | 57.6 times |
| share of turkey meat in total poultry meat production, % | 0.4 | 1.9 | 1.6 | 2.2 | 2.7 | 3.3 | 4.7 | 5.7 | 5.3% |
| Total poultry meat import, thousand tons | 1329 | 1295 | 986 | 493 | 551 | 271 | 225.9 | 217.7 | 16.4 |
| including turkey meat, thousands of tons | 106.3 | 74.5 | 41.4 | 26.7 | 13.0 | 6.0 | 5.3 | 4.7 | 4.4 |
| share of turkey meat in the total volume of poultry meat import, % | 8.0 | 5.8 | 4.2 | 5.4 | 2.4 | 2.2 | 2.3 | 2.2 | -5.8% |
| Total poultry meat export, thousand tons | 0.3 | 0.3 | 6.1 | 36.8 | 51.2 | 61.5 | 164 | 111 | 370.0 times |
| including turkey meat export, thousands of tons | 0.009 | 0.002 | 0.024 | 0.000 | 0.1 | 0.3 | 2.0 | 3.5 | 388.4 times |
| share of turkey meat in total poultry meat export, % | 3.0 | 0.7 | 0.4 | 0.0 | 0.1 | 0.5 | 1.2 | 3.1 | 0.1% |
| Consumption of poultry meat in Russia, thousand tons | 2,716.7 | 3,219.7 | 3,534.9 | 3,456.2 | 4,099.8 | 4,750.5 | 5,002.9 | 5,166.7 | 190 |
| including turkey meat, thousands of tons | 111.3 | 111.4 | 83.0 | 91.7 | 110.9 | 155.7 | 236.3 | 289.3 | 2.6 times |
| share of turkey meat in the total consumption of poultry meat in Russia, % | 4.1 | 3.5 | 2.3 | 2.7 | 2.7 | 3.3 | 4.7 | 5.6 | 1.5% |
| Average per capita consumption of poultry meat, kg | 18.9 | 22.5 | 24.8 | 24.2 | 28.6 | 32.4 | 34.1 | 35.2 | 186.0 |
| including turkey meat, kg | 0.8 | 0.8 | 0.6 | 0.6 | 0.8 | 1.1 | 1.6 | 2.0 | 2.5 times |

Sources: [9]

All in all, the volume of poultry meat production in kind during the analyzed period has increased by 3.7 times. The production of turkey meat is developing at much higher rates than the entire poultry industry in the country as a whole. However, in the total volume of poultry meat production, this sub-industry occupies an extremely insignificant position. The share of turkey meat production in the total volume of poultry meat products in 2005 was only 0.4%, rising to 5.7% in 2019, and this indicator increased by 5.3% during the analyzed period.

Due to the ultra-high growth rates of turkey meat production, the volume of imports of this type of food was reduced by 95.6%. The total volume of imports of all poultry meat for the same period decreased by 83.6%, i.e. in turkey breeding, a reduction in imports 12% higher than in the poultry industry overall was achieved. In other words, the consumption of turkey meat by the population of Russia is almost entirely covered by its production. In the total volume of imports of poultry meat products, turkey meat also occupies an insignificant share (2.2%), which is 5.8% below the 2005 level.

The export value of turkey meat in 2005 was only 9 tons, and in 2019 it was already 3.5 thousand tons. During the analyzed period, this indicator increases by more than 388 times. The total amount of poultry meat exports in total during the same period increased by 370 times. Despite such significant growth, the value of exports is extremely insignificant. Its share in the physical volume of turkey meat production is only 1.2%. The share of turkey meat in the total volume of poultry meat exports is also insignificant, in 2019 it amounted to only 3.1%, 0.1% more than the level of 2005. However, during the study period, this indicator was subject to significant fluctuations.

The extremely high growth rates of production against the background of a decrease in the value of import and an insignificant volume of export of turkey meat contribute to a significant increase in the volume of consumption of this type of food in Russia. During the period we studied, the total consumption of turkey meat by the population in Russia had increased 2.6 times and by 2019 its value had amounted to 289.3 thousand tons. The total volume of consumed poultry meat had doubled over the period under study, and in 2019 the share of turkey meat in it was 5.6%.

The average per capita consumption of turkey meat in Russia in 2019 amounted to 1.97 kg per person, which is 2.5 times higher than the 2005 level. In total, 35.2 kg of poultry meat per person was consumed in 2019.

Thus, the production of turkey meat is one of the fastest-growing areas of agro-industrial production in Russia. However, despite the extremely high rates of development, the importance of the turkey meat production industry in the scale of poultry farming in Russia as a whole is small, as evidenced by the extremely low shares of this type of product in the total volume of production, import and export of poultry meat.

The current situation in the field of turkey meat production should not be considered critical, since the industry has significant growth rates, and the turkey meat market is still far from the stage of full saturation, as evidenced by the significant lag of the Russian Federation in per capita consumption of this type of meat products from developed countries. For example, in Israel, the annual consumption of turkey meat per person was 13 kg in 2019, in the USA it was 7 kg, and in the EU countries, it was 5 kg.

To increase the role and importance of turkey meat production in the poultry industry of the country as a whole, it is necessary to consider the factors that hurt the development of the sphere of production in question.

The main reason for such insignificant importance of turkey meat production in the poultry industry as a whole is the poor awareness of the population of Russia in the beneficial and dietary properties of this type of product. Traditionally, in Russia, the most popular type of poultry meat is chicken, which determines such a low proportion of turkey meat in the total volume of both production and consumption of poultry meat.

The factor that hurts the rate of development of turkey breeding in Russia is also inadequate scaling of production by individual managers. In the case of low saturation of the market with goods, the desire of the majority of producers for a steady increase in production volumes is quite justified. However, in the process of further saturation of the market, an unjustified increase in production at any cost may lead to a deterioration in the financial situation of producers and, as a consequence, a certain part of them may leave the market altogether.

The higher price in comparison with broiler chicken meat significantly reduces the level of consumption of turkey meat. Such a high difference in cost is conditioned by the fact that at the initial stage of their business, the majority of turkey meat producers made significant investments. Consequently, over the entire payback period of long-term investments in this industry, the cost of the finished product will be quite high.

The high cost of turkey meat, and as a consequence, the low level of its consumption, also determines the irrational territorial distribution of production in this industry. Despite such a biological feature of turkeys as thermophilicity, most turkey breeding organizations are located in Siberia, in the Northwestern Federal District, as well as in Central Russia. It is more expedient to adjust the location of most of the producers of this sphere of agro-industrial production towards the South and North Caucasian federal districts.

The turkey industry in Russia practically does not have its breeding stock. Breeding material in the form of day-old chicks or hatching eggs is imported into the country mainly from the EU countries and Canada via Moscow. Due to the wide territorial spread of consumers of breeding material, there is a significant increase in transport and logistics costs, which again leads to an increase in the cost of the final product. Cases of death of day-old chicks or damage to hatching eggs are also frequent.

A significant threat to the further functioning of the turkey meat production sphere is the unsatisfactory structure of property and capital of the majority of goods producers.

**Table 2.** Consolidated analytical balance of the leading producers of turkey meat in Russia for 2018

| **Balance indicators** | **Thousand rubles** | **In% to the total** |
|---|---|---|
| **Asset** | | |
| 1. Non-current assets | 27,839,880 | 72.99 |
| including fixed assets | 24,782,765 | 64.98 |
| other non-current assets | 3,057,115 | 8.02 |
| 2. Current assets | 10,301,576 | 27.01 |
| including | | |
| stocks | 4,872,489 | 12.77 |
| VAT on purchased valuables | 137,232 | 0.36 |
| Accounts receivable | 3,539,542 | 9.28 |
| cash and financial investments | 1,717,021 | 4.50 |
| other current assets | 35,292 | 0.09 |
| Balance | 38,141,456 | 100 |
| Liability | | |
| 1. Equity capital | -826,221 | -2.17 |
| including uncovered loss | -10,585,846 | -27.75 |
| 2. Long-term liabilities | 13,077,852 | 34.29 |
| including loans and credits | 12,418,442 | 32.56 |
| 3. Short-term liabilities | 25,889,825 | 67.88 |
| including | | |
| loans and borrowings | 18,515,290 | 48.54 |
| accounts payable | 6,449,193 | 16.91 |
| Other current liabilities | 925,342 | 2.43 |
| Balance | 38,141,456 | 100 |

Sources: [10]

**Table 2** shows the consolidated analytical balance, compiled according to the financial statements of 21 producers of turkey meat, which, as of 2018, had produced more than 97% of the total production of this type of product. Therefore, it is quite reasonable to assume that the data given by us objectively reflect the property and financial situation of the investigated poultry industry. As can be seen from the data in the table, the composition and structure of the property of the leading producers of turkey meat in Russia cannot be considered optimal. The share of non-current assets exceeds 70%. Such a significant share of fixed assets is due to the irrational regional distribution of production in this industry. For this reason, due to the thermophilicity of turkeys, it becomes necessary to build capital premises for keeping poultry.

The composition and structure of funding sources for turkey meat producers indicate the critical financial situation of the absolute majority of them. Thus, according to the consolidated balance, the industry does not have capital, i.e. its sources of financing are negative. The amount of undisclosed loss in the industry is more than 10 billion rubles, which indicates the chronic loss of the majority of economic entities. The current situation is the reason that at the initial stage of the formation of the poultry industry under consideration, financial and credit institutions offered significant amounts of credit financing, provided that organizations had from 5 to 10% of their sources. As a result, key producers of turkey meat in Russia have an extremely high level of debt load. As of the end of 2018, the share of loans and credits amounted to 81.1%. Inadequate scaling of production with a low level of consumption of final products by the population ultimately leads to chronic unprofitability of business entities, as a result of which the uncovered loss eats up the entire equity capital in the industry. Thus, based on the results of the vertical analysis of the consolidated balance of turkey meat producers in Russia, it is quite reasonable to assert that most of them are in an unstable or crisis financial situation.

## CONCLUSION

To get out of the current crisis and create in the future favorable conditions for progressive development, it is necessary, first of all, to form a breeding stock within the country. In 2019, serious steps were taken in this direction, for example, in the Penza region in the conditions of the DAMATE Group of Companies, as well as in the Stavropol Territory, with the participation of foreign producers of breeding material, breeding reproducers are being opened. It is also planned to restore the breeding stock at EURODON LLC. At the same time, these projects do not fully neutralize the dependence of Russian turkey meat producers on imported breeding material. For this, in the long term, the task should be set to form breeding complexes by combining scientific organizations (laboratories) and breeding farms based on public-private partnerships. As a result of the implementation of these projects, the private sector makes a profit from the sale of pedigree products, and scientific organizations receive significant amounts of additional extra-budgetary funding. As for the state, as a result of the formation of breeding complexes, it also receives a part of the profit from their activities. In addition to the obvious economic effect, the independence of the whole poultry industry from foreign capital is also achieved, which strengthens the food security of the country as a whole. The use of Russian breeding material in the production of turkey meat will help reduce the cost of the final product, as a result of which there is an opportunity to increase the average per capita consumption of turkey meat in the Russian Federation.

A significant increase in the consumption of turkey meat in Russia can be achieved through direct government purchases from producers to provide food with high-quality dietary meat for preschool institutions, secondary schools, military units, hospitals, sanatoriums, boarding houses, resorts, and other institutions. In addition to the growth in sales among the main consumers, this event will also contribute to an increase in the popularity of turkey meat among the general population, due to which an increase in the consumption of this type of food should be expected.

The creation of conditions for the further progressive development of turkey breeding in Russia largely depends on the rational territorial distribution of production, the adjustment of which should take into account, first of all, such a biological feature of turkeys as their thermophilicity. For this purpose, the newly created turkey breeding complexes should be located in the territories of the South and North Caucasian federal districts. Optimal territorial distribution will significantly reduce the cost of final products, due to a decrease in the energy intensity of production. Besides, as a result of the placement of turkey breeding complexes in the labor-abundant subjects of the Federation, the problem of the high level of unemployment will be partially solved.

Starting from 2019, the problem of inadequate scaling of production in turkey breeding is partially eliminated since financial and credit institutions began to provide loans to organizations in this area, provided that the share of the organization's sources of financing is at least 20%, as well as the provision of collateral. These conditions will significantly limit individual managers in their desire to unjustifiably expand the scale of production.

One of the conditions for the growth of the efficiency of the functioning of the turkey meat production sphere is the creation of conditions for a variety of forms of management. The organizations, based on the consolidated balance of which we analyzed the property status of the industry and which provide more than 97% of the volume of turkey meat production in the country, carry out large-scale production. Private (family-operated) farms are unable to function in this market, due to the lack of access to credit resources, as well as problems with the sale of their final products. Small forms of business cannot carry out deep processing of meat products. At the same time, retail chains are interested in large supplies, and therefore, the farming sector has a significantly limited number of end consumers of its products. At the same time, small forms of business require smaller amounts of credit financing, and they are also characterized by high capital maneuverability. Access to this market for small forms of farming can be provided by merging private (family-operated) farms with financially disadvantaged organizations producing turkey meat on the principles of soft integration. In the newly created formation, private (family-operated) farms will be assigned the functions of raising young animals and fattening turkeys. Under the conditions of the organizations, part of the fodder production, incubation of day-old chickens, the slaughter of turkeys raised by farmers, as well as the processing of meat products will be carried out. The mild form of agro-industrial integration will allow all its participants to preserve their organizational and legal form.

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