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Prospects for the Development of Poultry Production in the Domestic Poultry Subcomplex

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ABSTRACT
The poultry subcomplex in conditions of top competition and saturation for chicken meat can develop in several directions. One of them is the development of the production of not only broiler chickens but also other types of poultry. Each type of poultry has features that must be considered. The demand in the domestic and world markets exerts an impact on production, as well as by the characteristic features of the division of labor in this area. The study aims to assess the prospects for the development of certain types of poultry in the conditions of the Russian poultry subcomplex, considering the existing and forecast market conditions. The work uses economic and statistical research methods. The analysis revealed the key problems in the production's development of certain types of poultry, their causes, and the author's proposed solutions to improve the poultry subcomplex.

Keywords: *poultry subcomplex, Russian poultry market, poultry production, poultry population, turkey meat production, waterfowl population.*

1. INTRODUCTION

The poultry subcomplex of Russia focuses on the production of chicken meat and eggs, the share of other poultry in agricultural organizations is minimal. This is due to some reasons: characteristics of demand, difficulties in keeping and feeding waterfowl. The turkey and quail sector has interest from both producers and consumers, but it is not large enough to develop this direction. Based on the analysis of the existing situation, it is advisable to assess the prospects for the development of the production of meat and eggs of other insufficiently demanded types of poultry. Assessment of the global market situation will reveal the niches that the poultry subcomplex can occupy in the next decade.

2. MATERIALS AND METHODS

The Russian poultry market has by now reached the point of 100% import substitution in meat and eggs. This results from a decision taken in the early 2000s to restore its own poultry sub-complex. The poultry population in all economic entities from 2000 to 2020 increased from 340.7 to 519.8 million heads. But it has not yet reached the 1990 level (Figure 1).

The diagram shows that over the past 30 years, the poultry population was maximum in 1990 - 659.8 million heads. From 1992 to 2004, there was a decrease from 568.3 to 341.6 million heads (40%).

Then the industry did not feel the support of the state, competing with the cheaper American chicken legs, which were massively supplied to Russia. 1.4-1.7 million tons of poultry meat in carcass weight was imported to Russia from 1994 to 1998, which was almost twice as much as its own production. Only the post-default 1999 reduced this gap to a minimum, but by 2000-2002 there was a twofold increase in imports, with an insignificant increase in domestic production (0.8 million tons versus 2.2 million tons of imports). The share of poultry meat imports was huge, for example, in 1998 it amounted to almost 60% of domestic consumption. Chicken meat accounted for almost 85%, turkey about 15%, and goose meat - 0.2% [8].

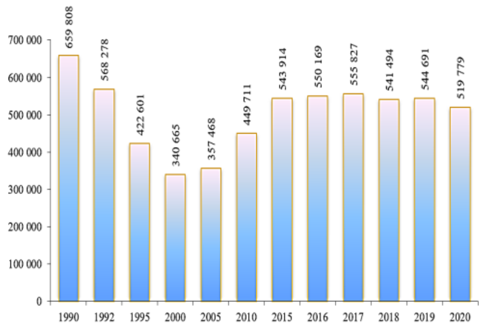

Figure 1 Dynamics of poultry population, thousand heads [9].

The state decided to support domestic producers of broiler carcasses and develop measures of state regulation of the poultry meat market in 2002. The industry gradually recovered and since 2005 has already shown steady growth in the poultry population. The poultry subcomplex now fully supplies the domestic market with poultry meat (mainly chicken). The share of chickens and roosters in the adult poultry population in agricultural organizations was 93.6-97.9% [9]. The reason for the popularity of chicken meat is its dietetic nature and traditional nature of consumption.

The main producer of poultry meat is agricultural organizations - 83.2% (Figure 2). As follows from this diagram, farmers and individual entrepreneurs have only 1.8% of the livestock, and households - 15%. In the latter case, we observed the greatest diversity in poultry species.

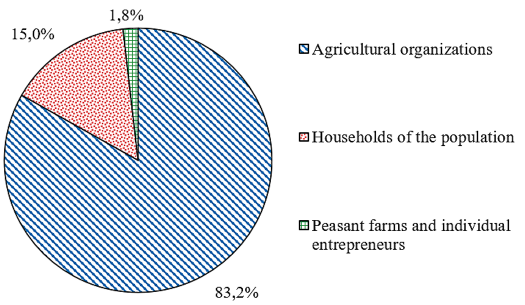

Figure 2 Distribution of poultry livestock in 2020 by economic entities [9].

The diagram in Figure 2 shows the basis of food security - agricultural organizations of the poultry sub-complex specializing in growing broiler chickens. Over the years of recovery, the demand for poultry among wholesalers and producers showed an increase: the sale of poultry in live weight in farms of all categories increased from 2.7 million tons in 2008 to 6.3 million tons in 2020 - 2, 3 times.

Russia was not included in the top ten leaders in the production of poultry meat per capita, although compared to 1980 there has been significant progress.

In the RSFSR (Russian Soviet Federative Socialist Republic), the indicator was 2.5 kg/person in 1961, and already 8.2 kg/person in 1980 [4]. According to the Council of Ministers of the RSFSR, this was because from 1966 to 1975 more than 40 poultry farms were put into operation [1].

After a sharp drop in consumer demand in the 1990s, the production of poultry meat per capita in 2000 was 5.3 kg but after state support of the industry by 2018, this figure reached 34.2 kg [4]. Over 18 years, the indicator has increased 6.5 times.

The effective consumer demand for deeply processed poultry products in Russia is currently limiting the growth in consumption. Despite the availability of poultry meat, premium finished products can still be in demand only for a limited circle of consumers. Chicken meat is mainly represented in the mass segment of the trade, less often - turkey. Quails occupy the egg segment.

Turkey meat is of dietary interest because of easy absorption and low cholesterol content in fat. Turkey meat has a high percentage of useful elements (magnesium, potassium, phosphorus), and protein [5].

Turkey's production in carcass weight over the past ten years has increased from 56 thousand tons in 2011 to 150 thousand tons in 2015, and 330 thousand tons in 2020 [3]. The increase was almost sixfold. The share of turkey in poultry meat production in slaughter weight, according to our calculations, amounted to 1.7%, 3.3%, and 6.6%.

The world market has produced an average of 6.1 million tonnes of turkey meat over the past five years. According to the United Nations Food and Agriculture Organization (FAOSTAT) and the Federal State Statistics Service, almost 43% of turkey is produced by the United States, 4,5% - by Russia [9].

Despite a small share, Russia is in the TOP-10 and was in sixth place in 2019 in terms of turkey production, and in 2020 - in fourth place, overtaking France (Figure 3). We associate this situation with a significant increase in the production of turkey meat in Russia and with the fact that the major manufacturers reduced the output of this product in 2020.

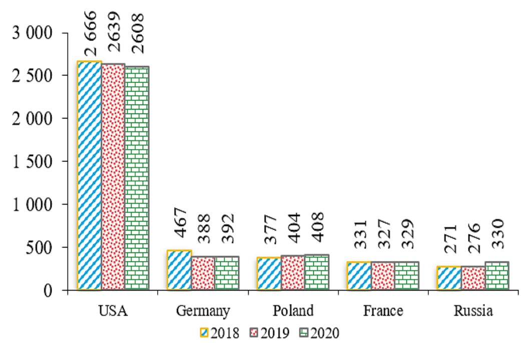

Figure 3 Dynamics of turkey meat production by the major world producers, thousand tons [6].

Figure 3 shows that the United States is the world leader in turkey production - 2.6-2.7 million tons. Turkey is part of the American food tradition. Turkey meat is consumed in large quantities at Christmas and Thanksgiving. According to researchers, the United States accounts for 41-42% of world consumption of turkey meat [6].

2020 showed a decrease in production in the United States primarily due to the achievement of the saturation point by the domestic market. We have noted the downward trend in the consumption of turkey meat in the European Union, so some countries are reducing production or growth rates. Although the focus on foreign markets can give an incentive to the growth of the industry, for example, as in Poland or Hungary.

The dynamics of turkey meat production in the TOP-10 countries are shown in Figure 4.

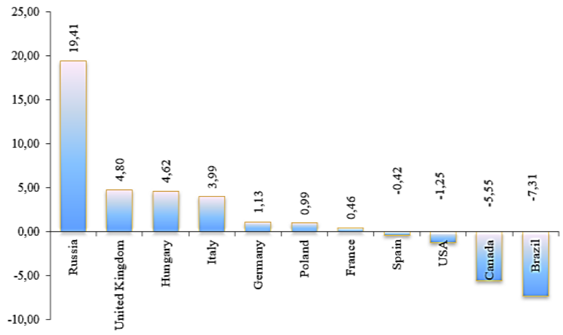

Figure 4 Dynamics of turkey meat production in 2020 [6].

The diagram shows the maximum increase in turkey meat production in Russia - 19.4%. An increase of about 4-5% was given by Great Britain, Hungary and Italy, about one percent - by Germany and Poland, less than half a percent - by France. We observe a slight decrease in production in the United States and Spain. Canada and Brazil reduced turkey production in 2020 by 5.6% and 7.3%.

3. RESULTS AND DISCUSSION

Comparing growth in 2020 relative to 2016, the picture changes: according to AGRIFOOD Strategies [6], Poland is in the lead, production increased by almost 2.3 times. Russia is in second place - an increase of about 1.5 times. Spain and Hungary share third place, they increased production by 1.2 times.

Turkey meat sales markets are also in the process of transformation, some changes in demand towards broilers are taking place in the Middle East, promising markets are the countries of Southeast Asia, in particular China. The Chinese market is the most promising for Russia.

The consumption of turkey meat in Russia is still at a low level - 2.2 kg/year per person. The production capacity of enterprises is sufficed to double the consumption rate [3]. The main thing is that domestic demand for turkey meat continues to grow.

The market for waterfowl meat is insignificantly represented in Russia. The difficulty of keeping geese is due to the need to provide grass feed: grass in summer and grass meal in winter. Dry years reduce profit margins so much that poultry industries are abandoning a once-lucrative business line.

Eggs are often developed among farmers for the sale of eggs to peasant farms. The advantages of breeding geese as a meat direction are obvious: such meat is high in calories (365 kcal). Monthly goslings are four times the weight of chickens, and more meat can be obtained in a short time.

The key producer of goose meat, according to FAOStat, is China (over 2 million tons), and in Europe - Poland and Hungary with more modest indicators - 22-25 thousand tons **Ошибка! Источник ссылки не найден.**.

The table presents data from the 2016 All-Russian Agricultural Census for poultry, including waterfowl, and a comparison with the similar 2006 census.

Table 1. Data of the All-Russian Agricultural Census of 2016 on the number of poultry of various species in all farms [2].

Poultry type	2006	Share,%	2016	Share,%	Share change,%	Growth rate, %
Total, thousand heads	391160	100,0	557127	100,0	-	142,4
of them						
geese	10945	2,798	9241	1,659	-1,139	84,4
ducks	21715	5,551	21714	3,897	-1,654	100,0
turkeys	2116	0,541	8900	1,597	+1,056	420,6
guinea fowl	78	0,020	279	0,050	+0,03	357,7
quail	1289	0,330	4001	0,718	+0,388	310,4
pheasants	24	0,006	73	0,013	+0,007	304,2
ostriches	5	0,001	3	0,001	0	60,0

The table shows that the share of geese in the poultry population was 2.8% in 2006, and in 2016 it decreased to 1.7%. The geese population decreased by 15.6% to 9.2 million heads. The number of ducks is slightly higher - 21.7 million heads, for 10 years its change was not observed, but the share of ducks in the total poultry population also decreased from 5.6 to 3.9%. This change was because of an increase in the chicken's share population.

4. CONCLUSION

The poultry industry in Russia has sufficiently recovered and provided the domestic market with meat, in more than 90% of cases this is broiler meat. Turkey meat is insignificantly presented to consumers in retail chains, we use most of it for industrial processing.

Russia needs to develop a niche for eco-products and focus on the supply of broilers abroad, China, and other countries of the near and far abroad.

The situation for waterfowl meat is ambiguous. On the one hand, this is a promising direction of the poultry subcomplex because of the nutritional and value characteristics of this meat, on the other hand, it is not always profitable for enterprises to develop this sector. According to the 2016 agricultural census, households account for 87% of the ducks and 83.5% of the geese.

Without a government program to develop the waterfowl sector, meaningful results will be difficult to achieve. Filling the market with this high-calorie and high-quality meat will contribute to the diversity of the population's diet. In addition, this is a profitable export industry, as the world is experiencing an increase in imports of goose and duck meat, and Russia can occupy a certain niche in this market.

REFERENCES

[1] On the work of the poultry industry of the RSFSR: Resolution of the Council of Ministers of the RSFSR of March 24 1975. http://pravo.gov.ru.

[2] Results of the All-Russian Agricultural Census 2016: In 8 volumes / Federal State Statistics Service. ISC "Statistics of Russia" 1 book 1 2018 p. 458.

[3] Turkey production in Russia in 2020 and the rating of the largest producers. https://www.moshol14.ru/press-centr/novosti-rynka/indeyka.

[4] World production of poultry meat per capita. https://www.moshol14.ru/press-centr/novosti-rynka/myasa-pticy-mir-na-chel.

[5] Marketing Research: Turkey Market 2013-2017. Innovation and Consulting Center of the Agroindustrial Complex 2018 p. 28. http://ikc.belapk.ru.

[6] A. Medvedeva, Russia became the fourth largest producer of turkey meat in the world. https://www.agroxxi.ru.

[7] Turkey production in Russia in 2020 and the rating of the largest producers. https://www.moshol14.ru/press-centr/novosti-rynka/indeyka.

[8] Characteristics of the poultry meat market in Russia: the effectiveness of its foreign trade regulation 2002 pp. 7-12. http://files.rsdn.org/6614/final-r.pdf.

[9] Federal State Statistics Service. https://rosstat.gov.ru.

[10] Food and Agriculture Organization Corporate. Statistical. http://www.fao.org.