

STATE AND TRENDS OF PIG PRODUCTION IN TAMBOV AND LIPETSK REGIONS OF RUSSIA

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Invited paper

Abstract: The following article deals with the condition of pig breeding as a branch of the animal industry. It represents the dynamics of pork production, the number of a livestock and the realization of pig livestock on slaughter. The author designates the making and processing enterprises for the Central federal district in general and for Lipetsk and Tambov regions in particular.

Key words: pig breeding, strains of pigs, technology, complex

Introduction

The meat animal breeding is one of the major branches of agricultural complex of Russia. However the branch has had some difficulties since the beginning of restructuring. So during the period since 1992 till 2001 the indicators of the livestock of the agricultural animals and the meat output volume in Russia were steadily decreasing besides the minimum exceptions. But since 2002 a small increase has been outlined in this branch. However a meat manufacture in 2008 has not reached the level of 1992 yet. So if in 1992 it was produced 8.3 million tons of meat of all kinds in our country, in 2008 this indicator made up only 5.5 million tons (Table 1; Figure 1).

Table 1. Production of different kinds of meat in Russia during the period 1992 to 2008, thousand tons

Indicators	1992	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008
Beef	3632	2733	1894	1873	1957	1930	1851	1759	1705	1690	1726
Pork	2784	1865	1569	1498	1583	1679	1647	1520	1642	1873	1812
Poultry	1428	859	755	862	938	1034	1152	1380	1624	1916	1653
Mutton	300	240	119	114	115	118	126	150	153	163	182
Other	1166	99	95	104	107	106	154	88	65	64	171
TOTAL	8260	5796	4432	4451	4700	4867	4930	4897	5189	5706	5544

First of all this situation is connected with the abrupt reduction of the agricultural animal livestock during the last fifteen years. Since 1992 till 2008 the number of cattle decreased from 52.2 to 21.5 million heads, pig livestock – from 31.5 to 16.5 million heads, sheep and goat livestock - from 51.4 to 20.7 million heads. Thus, if in 1992 the Russian Federation still occupied the fourth place in the world on absolute meat output volume, conceding only to China, the USA and Brazil (several years before the USSR confidently occupied the third place in the given comparison), then in 2008 Russia has fallen to the sixth place on absolute volumes of meat manufacture.

The reduction of inhouse meat manufacture was undoubtedly reflected on its consumption. Despite the considerable volumes of imported meat, the level of meat consumption per head in Russia still remains at the low level even concerning import. If in the early nineties the consumption of meat of all kinds made up 75 kg per head, then in 2001 this indicator was 44 kg, by 2008 it was 53 kg.

The basic factors promoting curtailment of meat production in public sector are the reduction of technological fleet of cars in the animal industries, the growth of bankruptcy of the cattle-breeding farms, the deterioration of a financial condition of a considerable part of the agricultural enterprises, the backwardness of a market infrastructure. The deficiency of cattle-breeding production against the structural imperfection of the branch and menacing demographic changes in the countryside objectively deduces a corresponding circle of questions on the level of the national safety.

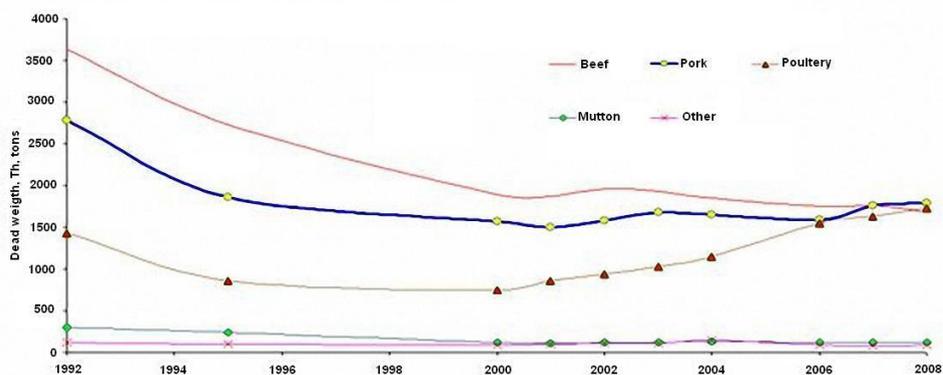


Figure 1. Dynamics of meat production in Russia during the period since 1992 till 2008

Materials and Methods

In the following research statistical methods, tables and annual reports of agricultural management were used for the impact analysis of pig livestock and pork production.

Results and Discussion

According to the classification of the Food and Agricultural Organization (FAO) pork refers to irreplaceable foodstuff owing to the favorable content of the full and balanced set of irreplaceable amino acids, vital polyunsaturated fat acids, vitamins and microelements.

The statistical data claim that the pork share in a consumer balance in the developed countries reaches 40 % while in Russia it does not exceed 33 % on internal manufacture and 30 % on meat balance concerning import.

The modern technologies of pig breeding of the industrial type allow us not only to increase the volumes of a domestic pork production in short terms quantitatively, but also to lower its cost price. While the cost of forages, energy carriers and wages level are lower than in foreign countries, the domestic pork production can possess not only absolute competitiveness in comparison with the imported goods, but also the potential for export to foreign countries.

Tambov and Lipetsk regions are included in the Central federal district of the Russian Federation. In the agricultural production of Lipetsk region there are about 300 enterprises, 1200 country farms and 200 thousand small holdings. The area of agricultural grounds exceeds 1.8 million hectares, including 1.5 million hectares as arable lands. The animal breeding and plant growing develop intensively. The cultivation of grain crops, sugar beet, sunflower, potato and vegetables is traditional here. There are more than 450 agricultural enterprises and 3000 country farms in Tambov region. One of the directions of the animal breeding in Lipetsk and Tambov regions is a branch of pig breeding.

It is necessary to note that pig breeding is characterized by a fast turnover of capital and it provides a high profitability and investment payback.

Pig breeding possesses an undoubted advantage over meat cattle breeding. The period of industrial breeding and fattening of pigs is 2-2.5 times shorter than that of cattle, the specific cost price of feeding in pig breeding is 1.5 – 1.8 times lower, the veterinary expenses and labour-output ratio are much lower. The number of pigs in the given regions makes up 10.54 % of the livestock in the Central federal district that includes 17 regions. Taking this into consideration, the development of pig breeding is natural, objectively caused and profitable not only economically but also socially. It is the most perspective direction of the meat complex revival in Tambov and Lipetsk regions.

The impact analysis (Figure 2) of the livestock shows that in Tambov region pig livestock was in 2008 31.3 thousand heads less than that in 2006. There is another tendency in Lipetsk region. The number of pig livestock in 2008 has increased on 168 % in comparison with 2006. It is connected with the fact that some pig breeding complexes are gaining power in the region. For example, there is a public corporation "Lipetskmyasoprom", a close corporation "Ranenburgsky", a public corporation «Russkaya APK», Co Ltd "Otrada-Gen", etc.

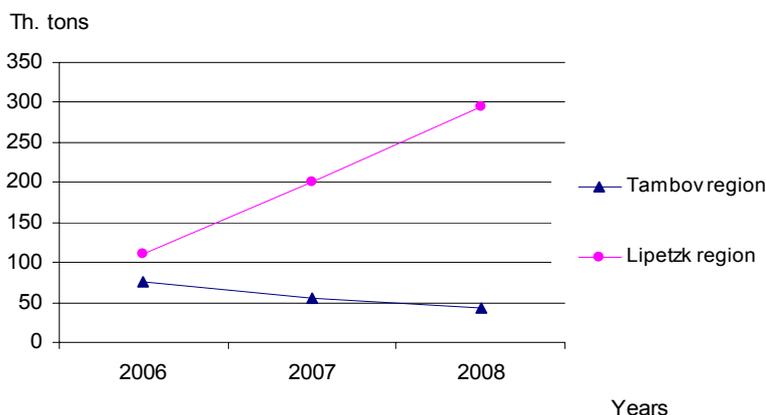


Figure 2. Dynamics of pig livestock in the studied regions (thousand heads)

The analysis of the realization of pigs on slaughter has allowed to draw a conclusion that in general there is a rather positive tendency. So in Tambov region this indicator increased in 2008 on 24 %, and in Lipetsk region on 146 % respectively.

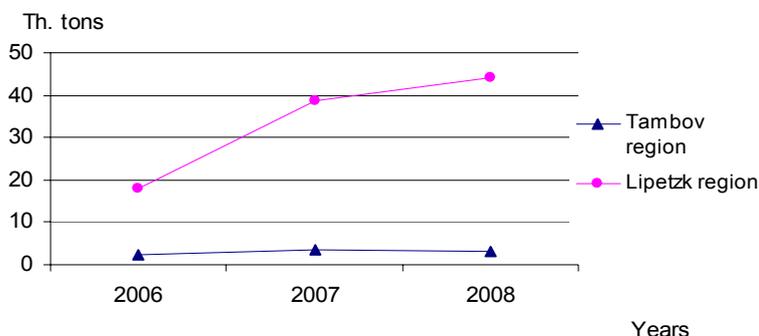


Figure 3. The realization of pigs on slaughter in Tambov and Lipetsk regions

In June 2005 the building of a pig complex was begun in Lipetsk. It is one of the largest vertically integrated agricultural companies in the meat industry of Russia. Two of the first modules were opened in February, 2006. The capacity of the third and the fourth modules is 12.5 thousand tons of pork in live weight a year. Now they are working at full capacity. Thus the general capacity of all of the three modules of the pig complex in Lipetsk will reach approximately 50 thousand tons of meat in live weight a year. Each of four modules is rated at the nonrecurring housing of 4800 sows and the breeding of approximately 100 thousand pig heads (12.5 thousand tons of meat in live weight) a year. The latest equipment of the leading European manufacturers is established on the pig complex "Cherkizovo" Group" in Lipetsk, while the technological support is carried out by the Danish company «AIB Consult». A new feed mill started working close to Lipetsk pig complex that provides a livestock with forages completely. The designed capacity of the mill is more than 180 thousand forages a year, or 30 tons an hour. The mill has the equipment of the Dutch company "Ottevanger". There is a new grain elevator near the feed mill where it is possible to store 100 thousand tons of grain at the same time each year (Figure 3).

The public corporation "Cherkizovo" Group" has finished building and has put in production a pig complex which capacity is 50 thousand tons of meat a year in Gavrilovsky district of Tambov region. The complex is rated at housing of 100 thousand pig heads at the same time. The total amount of the planned investments is about 80 million dollars. There is its own food reserve which has been supplied with the area of 12.5 thousand hectares. In each module a three-staged scheme of pig production and breeding is provided: a reproducer for epizootic safety, a site of nurture and a site of fattening are separated. Animal fattening and nurture are carried out according to the Danish technology which is considered to be the most

effective in the world. Its basic difference is the system of a daily veterinary service. The special attention is paid to preventive maintenance of diseases and observance of quarantine rules at the complex. The problem of disinfecting and recycling of manure is solved in terms of manufacturing by using the achievements of biotechnologies. They are effective and specially developed microbiological preparations which allow to accelerate disinfecting of manure drains and to lower the level of unpleasant smells in the cattle-breeding premises. For example the microbiological preparation «Tamir» is a complicated combination of natural microorganisms according to functional activity and structure including *Lactobacillus casei* 21, *Streptococcus lactis* 47, *Phodopseudomonas palistris* 108, *Caccaromyces cerevisiae* 76 and saprophytic microorganisms promoting more active decomposition of organic waste. Using microbiological preparations allows to solve a problem of environmental pollution and other negative consequences of industrialization by natural methods. Thus it gives an opportunity to reduce breeding cost for agricultural production and to contribute to restoration and maintenance of fertile soils with the help of organic dung, such as manure and compost that is a part of ecological agriculture.

Highly productive breeds of pigs are bought from the European leader «Dan-Bred» (Denmark) in the selection manufacturing. Now three strains are used: landrace, Yorkshire and Duroc. A breeding reproducer for two strains (landrace, Yorkshire) is registered in Lipetsk region. As for industrial production they apply two schemes of pig breeding (Figure 4 and 5).

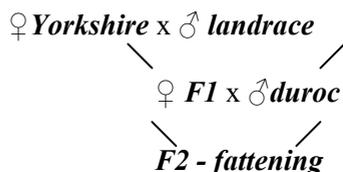


Figure 4. The first scheme of pig breeding for industrial production

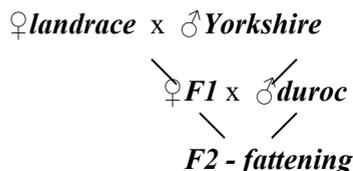


Figure 5. The second scheme of pig breeding for industrial production

As an element of technology the method of feeding "in plenty" is applied. In our opinion, the given technique has a number of advantages over traditional ones, for example, animals consume as much fodder as they need to implement

their vital functions and to get a maximum increment of live weight. Besides there is no cannibalism among pigs while the establishment of hierarchy in time and feeding periods is observed. Animals have a possibility to be fed unlimitedly owing to which there are no conditions for overeating and adiposity. The watering is carried out by an animal itself without departing from a feeding trough. The favorable factor is that salivation creates propitious conditions to start a mixed fodder fermentation getting to a feeding trough.

After the implementation of the project in Gavrilovsky district "Cherkizovo" Group" intends to build three more pig complexes till 2012 with the general capacity of 50 thousand tons of pork annually in Tambov region. The Russian-Danish investment fund called "Dan-invest" will carry out its own pig project in Rasskazovsky district on the basis of the farms "Novoe" and "Nizhnespasskoe". The capacity of the pig complex is 25 thousand tons a year. The company itself deals with growing the grain for fodder on the territory over 10 thousand hectares for the feed mill. Besides, they want to build up a meat-processing factory with the capacity of 50 thousand tons of pork a year. Raw materials will be partially delivered by "Dan-invest" to the branches located in Krasnodar territory.

Conclusion

The analysis represented in this article allowed to infer that the branch of pig breeding is a foundation stone among the branches of the animal industries in Tambov and Lipetsk regions. Thus the basic tendencies of pork production in modern conditions are a wide introduction of industrial technique on the basis of concentration and specialization of manufacture, use of the best western practices, building of new pig breeding complexes with the finished period of manufacture (the making and processing enterprises).

The further prospects and progress of agriculture of these regions are closely connected with the development of pig breeding because the accompanying branches of agriculture required for pork production need human resources that are so important during the crisis.

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Stanje i trendovi u svinjarstvu u regionima Tambov i Lipetsk u Rusiji

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Rezime

U ovom radu su predstavljени uslovi u svinjarstvu kao grani stočarstva. U radu je predstavljena dinamika proizvodnje svinjskog mesa, broj grla i realizacija nakon klanja. Autor analizira proizvođače i prerađivače u centralnom federalnom okrugu uopšteno, kao i za regione Lipetsk i Tambov.

References

- КОНЦЕПЦИЯ-ПРОГНОЗ РАЗВИТИЯ ЖИВОТНОВОДСТВА ТАМБОВСКОЙ ОБЛАСТИ ДО 2010 ГОДА (2002): Тамбов., 96 с.
- НАСТАВЛЕНИЕ ПО ПРИМЕНЕНИЮ ЭНЕРГО-РЕСУРСΟΣБЕРЕГАЮЩИХ ТЕХНОЛОГИЙ В СВИНОВОДЧЕСКИХ ПРЕДПРИЯТИЯХ ТАМБОВСКОЙ ОБЛАСТИ. Под общей редакцией ШУЛАЕВА М.Г. (2008): Тамбов, Изд-во ИП Чеснокова А.В., 82 с.
- РОССИЙСКИЙ СТАТИСТИЧЕСКИЙ ЕЖЕГОДНИК. (2007): Стат.сб./Росстат., М., с. 443-479
- РОССИЙСКИЙ СТАТИСТИЧЕСКИЙ ЕЖЕГОДНИК (2008): Стат.сб./Росстат., М., с. 437-491
- РЕКОМЕНДАЦИИ ПО ПРИМЕНЕНИЮ ЭНЕРГОСБЕРЕГАЮЩИХ ТЕХНОЛОГИЙ В СВИНОВОДЧЕСКИХ ПРЕДПРИЯТИЯХ РАЗНОЙ ФОРМЫ СОБСТВЕННОСТИ (2005): Тамбов: Тамбовский филиал ВИЖа, - 36 с
- СТАТИСТИЧЕСКИЙ БЮЛЛЕТЕНЬ. Произведено и отгружено сельскохозяйственной продукции в крупных, средних и малых сельхозпредприятиях в январе-декабре 2008 г. Тамбов., 2009 г., с. 16-17.
- СТАТИСТИЧЕСКИЙ БЮЛЛЕТЕНЬ. Основные показатели развития животноводства в сельскохозяйственных предприятиях Липецкой области за 2008 год. Липецк, 2009, с.6-7.
- СТАТИСТИЧЕСКИЙ БЮЛЛЕТЕНЬ. Сведения о производстве и отгрузке сельскохозяйственной продукции в сельхозорганизациях Липецкой области за январь-декабрь 2008 г. Липецк., 2009 г., с. 4-7.
- СТАТИСТИЧЕСКИЙ БЮЛЛЕТЕНЬ. Производство основных продуктов животноводства по категориям хозяйств за 2008 г. по муниципальным образованиям Липецкой области. Липецк, 2009 г., с. 5-6.

ЦЕЛЕВАЯ ПРОГРАММА МИНСЕЛЬХОЗА РОССИИ «РАЗВИТИЕ
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