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Basic present tendencies in swine breeding

Abstract. Swine breeding is a branch of agriculture with high level of development and traditional in Belarus. The problem of basic directions in development of swine breeding is examined in the paper. In conclusion the main reserves for growth of the economic efficiency of pork production are found in strengthening of food reserve and using of complete feed mixture balanced on feed protein, increasing of leguminous plants and many other factors.

Key words: pork production, Belarus, economic efficiency

Introduction

Agriculture of the Byelorussian Republic is in enough complicated position in the modern economic conditions. The state support is being decreased and prices for energy carriers are enlarged and the system of deliveries of agricultural products from abroad becomes complicated.

Swine breeding is a branch of agriculture with a high level of development and is traditional for Belarus. It is an essential branch for vital functions of people and is widely practised in majority of regions of the globe. It is one of the most profitable branches of animal breeding. It can not only stop recession of meat production but also create its necessary supplies for the export and import purposes. In all countries of the world have occurred essential shifts in the structure of meat production during the last years. The share of pork in the total meat production has increased from 35 up to 40 %. Especially big weight it has in the EU countries where it more pork than beef and poultry meat together taken is produced.

Material and methods

All kinds of meat production have been investigated, in particular pork production. The statistical information about pig breeding in the world and Belarus has been analyzed.

Results of research

Food problem is the main question of modern developing world. It is known that in many countries of the world a food deficiency takes place. According to FAO in the beginning of the 21st century the following model of food consumption is expected: in the developed countries on average 800 kg of grain per capita annually (100-150 kg in the form

of bread, cereals, etc. and 650-700 kg transformed into meat, eggs, milk etc.) and in the poorest countries 200 kg of grain per capita annually (in the form of bread).

To swine breeding belongs the leading role in solution of the meat problem. Pork is the first in world meat supply. Its share in whole world production of 255 million tons of meat made up in 2005 more than 100 million tons (39,4 %), poultry meat more than 78 million tons (30,7 %), beef, veal and buffalo, camel, ass and mule meat more than 62 million tons (24,4 %), mutton and goat meat more than 12 million tons (4,8 %), rabbit meat more than 1 million tons (0,4 %) and horse meat about 1 million tons (0,3 %).

Number of pig stock grows constantly in the world. Now there are 960 million of pig heads in the world and for the last 5 years production and consumption of pork have increased by 20 %.

Production of pork has achieved 84.4 million tons. China produces 44 % of pork world output and the stock of pigs numbers 486 million heads.

Table 1. Production of pork in selected countries in the world, thousand ton

Country	Country population, thousand people	Year					Production of meat, kg per	
		2001	2002	2003	2004	2005	pig	person
Russia	143246	1568	1494	1579	1678	1750	109.5	12.2
Ukraine	48523	675	591	599	631	630	86	12.9
Belarus	9895	301	303	300	290	327	94.3	31.3
Belgium	10312	1042	1062	1040	1029	1050	164.9	101.8
Brazil	178470	2600	2637	2798	3059	3110	94.2	17.4
Canada	31510	1640	1726	1852	1952	1970	132.7	62.5
China	1311709	41405	42982	44373	46236	47752	101	36.4
Denmark	5364	1624	1716	1759	1762	1762	132.9	328.5
France	60144	2312	2315	2346	2321	2290	150.8	38.1
Germany	82476	3981	4047	4110	4239	4366	164.8	52.9
Italy	57423	1478	1509	1535	1588	1618	175.4	28.2
South Korea	47700	915	927	1005	1149	1100	120.9	23.1
Mexico	103457	1029	1057	1070	1043	1100	60.8	10.1
Moldova	4264	49	43	47	44	44	88	10.3
the Netherlands	16149	1622	1432	1377	1250	1245	110.9	77.1
Philippine Islands	79999	1008	1064	1332	1385	1400	111.8	17.5
Poland	38587	1923	1849	2023	2188	2100	116	54.4
Spain	41060	2904	2989	3070	3189	3335	139	81.2
Sweden	8876	277	275	283	287	288	151.3	32.4
USA	294043	8597	8691	8929	9056	9332	154.5	31.7
Vietnam	81377	1409	1515	1653	1800	1700	72.3	20.9

Source: [Левангин 2006] and own work

Per head of pig livestock France produces 152 kg of pork, Sweden 148 kg, Austria 145 kg, the USA 135 kg, Russia 48 kg, Republic of Belarus 86 kg. In number of countries such as Poland, Great Britain and Italy the production of pork has been enlarged and number of pigs decreased due to the at decrease intensifying factors of development.

Social and economic crisis had its impact on development of swine breeding in the countries of former USSR in 90ies of the past century. So, in comparison with 1989 the livestock of pigs in Russia by 2005 was decreased by 2.3 times and production of pork was diminished by 2.89 times. In Russia having population of 150 million people the production of pork is less than in Denmark where population is 5 million. Russia has come into first position in the world with respect to imports of pigs' meat. And this position continues to strengthen.

Experience of highly developed countries testifies to that a steady tendency of growing specialization and growth of concentration in swine breeding is independent of type of ownership and management. In conditions of different organizational forms of management the part of big enterprises of industrial type will increase in process of development and introduction of new technologies of production.

So, while in the structure of world meat production pork constitutes 39.4 %, then in Asia it will be 53.2%, in Europe 49.3%, in North America 25.4%, in South America 14.3%, in Oceania 10.3% and in Africa 7.2 %. The highest consumption takes place in Europe, namely 34.3 kg/person/year, and the lowest is in Africa, 1 kg/person/year, but still pork remains the most consumed meat in the world. The best world producers, for example Denmark, produce 5 times more pork than they consume. Denmark is its main exporter.

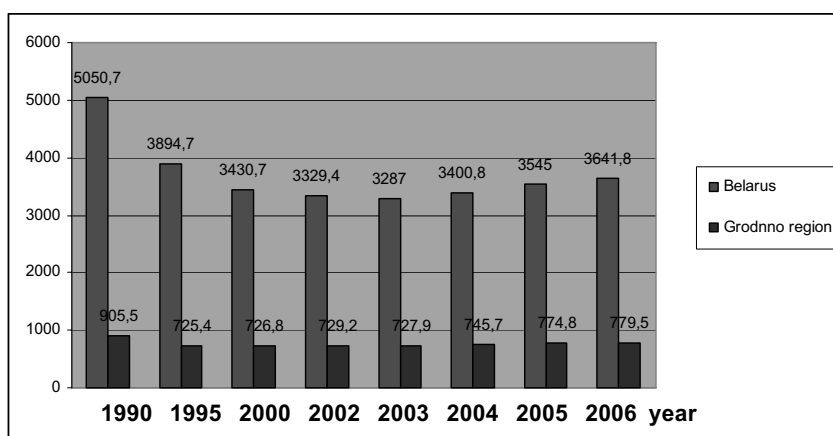


Fig. 1. Dynamics of a mid-year number of livestock of pigs in Belarus and the Grodno region, thousand heads

Swine breeding is very important for our country as the most precious and productive branch of animal breeding. In 2006 in Belarus was produced 327 thousand tons of pork. About 80% of pork is produced in the socialized sector of economy in industrial complexes. However since 1990 a process of recession has begun in the branch. The livestock of pigs in all classes of farms has decreased more than by quarter including that in the public sector. Reasons to that were a deficiency and a rising cost of mixed fodder, an imbalance of

feeding rations with respect to the basic nutrient elements, a rising cost of fuel, electric power, prophylactic and medical preparations and a break of inter-economic and inter-branch relations.

But in the middle of nineties the situation began to improve. The most considerable breakdown in livestock heads in comparison to 2006 happened in 1995. During last years in the structure of pig, cattle and poultry products the pork proportion, thanks to decreasing share of beef and poultry meat, is observed.

Territorially swine breeding is takes place all over the republic. More than 60% of the livestock of pigs is concentrated in the farms of public sector. Each administrative region has some agricultural enterprises which breed and fatten up pigs for sale. Today 107 industrial complexes in the republic are breeding and fattening pigs, 12 thousand up to 108 thousand porkers a year in one complex, and about 86% of all pork is produced there.

From year to year the number of pigs' livestock decreases in the republic and the product grows. Gross production of pork in Belarus in 1990 amounted to 438 thousand tons. Then, because of decreasing of livestock number, the production began to drop sharply and in 1995 it fell down to 263 thousand tons. It decreased 1.7 times. Then the production began to increase gradually and despite of continuing decrease of livestock number in the last years it has stabilized on a level of more than 300 thousand tons. It is necessary to underline that this growth was achieved due to increasing average daily growth of fat mass from 295 gram in 1995 up to 468 gram in 2006. It is necessary to notice that inputs of feedstuffs for production of 1 hundredweight of pork have decreased from 8.99 hundredweight of fodder units down to 5.2 hundredweight of fodder units. It is necessary to underline that on present day filling up of complexes capacity is still low and reaches about 72%. It means that the branch has a sufficient potential for further growth of production volume of meat by means of employment of progressive technology and the republic has a gene pool capable to supply production of this national Belarussian product.

But in the Grodno region the daily lifeweight accretion increases above 10.0% annually. In 2006 a peak value of this parameter was achieved. It was 515 gram (fig. 2)

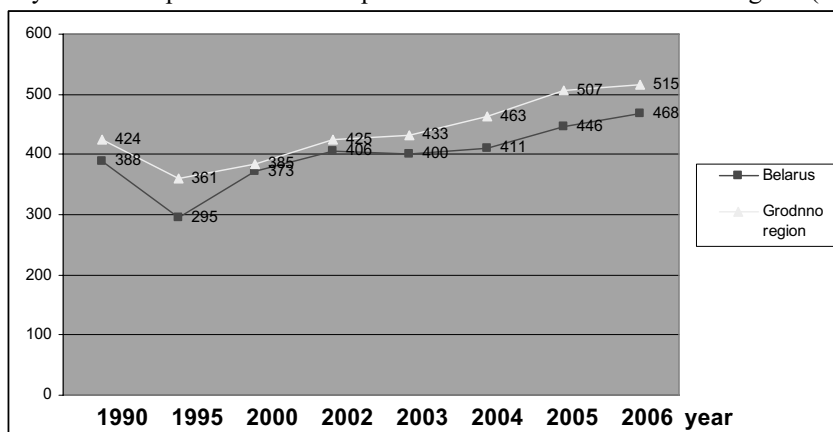


Fig. 2. Dynamics of a daily average weight increase

Thus despite of seriously unfavourable economic conditions the livestock number is raised and the gross production of pork is increased. The level of pork production has been

maintained mainly due to an increase of daily average increment of animal weight and a decrease of consumption of feedstuffs per product unit.

It is one of few indices of which level is higher than that achieved in 1990. At the same time number of animal falls has increased and litter from one sow has decreased.

But there are still many unsolved problems in swine breeding in the republic. There has been a negative situation with profitability of animal breeding branch during last years. The profitability (profit/cost ratio) of branch equaled 35.7 % in 1990. Such situation was caused by attention the state paid to the animal breeding branch and by determination of optimum purchasing prices of pork and subsidies allotted first of all to mixed fodder.

However the subsequent negative trends in agriculture and the swine breeding branch connected with disintegration of the USSR have led to a slump in the profitability of swine breeding. The unprofitability of swine breeding has equaled 0.9% in 2000 and 2.8% in 2001. The profitability of pork production in agricultural organizations in Belarus in 2006 reached 9.1% yet. Situation in Grodno region is a little bit better. Here the profitability in 2006 was 12.9% (this is peak value for all regions).

But in the developed economic conditions the prospects of development of swine breeding branch look rather pessimistic. The deterioration of main fixed assets continues to increase and a majority of enterprises do not have enough resources not only for modernization but also for elementary repairs and substitution of the falling out equipment. In such conditions further branch intensification remains as big problem and the competitiveness of production in such conditions practically is not possible. To solve problems of the branch is impossible in modern economic conditions. It is necessary to study experience of leading farms of the republic and neighbouring states. But it will be difficult in such conditions to solve such problems without a support from the state.

Last year some documents were issued which were directed at developing this branch. They are the republican complex program of livestock breeding for years 2005-2010, the concept of development of swine breeding branch in Belarus and the republican complex program of intensification of fodder production in years 2004-2008. The basic paths of further development of all agricultural industry and the cattle breeding branch are concentrated and defined in a state program of reconstruction and development of villages in years 2005-2010.

At present stage the development of main reserves of growth of economic efficiency of pork production are concluded in strengthening of food reserve and using of complete feed mixture balanced on feed protein, increasing of leguminous plants acreage and many other factors.

Conclusion

The world and domestic experience shows that for increasing the volume of pork production, rising its quality and competitiveness it is necessary to conduct action aimed at rising of the animal productivity and decreasing of fodder costs. Solution of this problem is seen in a general change from a prodigal and intensive way of development with big costs of material resources and a constant growth of capital investments to another way of development. Such way of development requires raising of the genetic potential of animal productivity on the basis of deeper individual and breed selection work, introducing adequate nutrition of animals, using of promising technologies, perfecting the mechanism

of management and raising of interest of each worker from milkmaid to manager of farm in the economic results of the farm.

For the purpose of enhancing the productive efficiency of pork production and its competitiveness it is necessary to improve the internal and external economic relations on the basis of agri-industrial integration and coordination of all production processes, beginning from pig rearing to realization of products of swine breeding in view of market needs.

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