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EVOLUTION OF PIGS' LIVESTOCK AND PORK PRODUCTION IN THE WORLD

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Abstract

This paper work covers the evolution of pigs` livestock, meat production, and annual meat consumption per person during the years 2005-2016. Based on the obtained data was established a continuous growth of world pigs` livestock and meat production. In 2016 compared to 2005, the livestock on pig increased by 9.2% and the meat production was increased by 14.18%, what proves that production processes have been using the intensive methods and the increase in meat production has been based on the increase of animal production. The world pork consumption has been increased by 20.68%. That means that the total of 6.5% in growth was based also on the meat import.

Key words: *evolution, pork and worldwide production.*

INTRODUCTION

In our days and in perspective the consumer is the main factor in the development of meat production. The pork is an important source of nutrition; this is why the safety of products is an undeniable requirement.
The meat has to be tasteful, with a high nutritional value and an affordable price.
As a result the competitive meat producers, which insure the internal and external market with quality meat will develop based on the gained profit from the efficient delivery of meat products.
It is important also to produce meat with superior technological qualities.
The animal breeder has to identify intensive methods of pork production in order to satisfy the consumer and the processor requirements (Rotaru, 2016; FAO).

MATERIALS AND METHODS

The results presented by FAO during the years 2005-2016 have been used in this research. It was studied the evolution of pigs `livestock, meat production and the total meat consumption per capita butalso in different countries.
The results were analysed based on the calculations for the differences assessment between various countries during the indicated period.

RESULTS AND DISCUSSIONS

Evolution of swine population. The swine population varied in the period of 2005-2016, but on the international level a considerable growth has been recorded and represents an increase of 9.2%.
In Brasil, Russian Federation, Spain and USA the population increase was between 14.2 and 60.2%.
In 2016 the total number of swine population in China has reached 456.773 thousands pig, in United States -74.500 thousands pig.
The results listed in the above table show that some countries like Belgium, Denmark, Poland, Mexico and France the total amount declined considerably, especially in Poland and France.
In the last two years (2014-2016) China had a small decrease of swine population as well. Regardless of that, China remains the world leader with 50% of the world population (Table 1).

Table 1. The evolution of swine population for the period of 2005-2016, thousands

Country	2005	2010	2013	2014	2015	2016	2016/2005,%
World	906,663	965,885	977,020	987,854	990,507	981,797	108.22
Belgium	6,318	6,430	4,243	6,350	6,364	6,176	97.75
Brasil	34,063	38,956	39,040	37,930	39,795	39,950	117.31
Canada	14,810	11,835	12,879	12,940	13,247	12,770	86.22
Denmark	13,534	13,173	12,075	12,331	12,537	12,383	91.36
France	14,951	14,531	13,487	13,335	13,162	12,709	85.00
Germany	26,857	*26,509*	27,790	28,338	27,652	27,376	101.93
Italy	8,9 71	9,157	8,662	8,676	8,674	8,477	105.68
Mexico	18,112	14,865	16,038	16,098	16,364	16,753	92.49
Poland	18,112	14,865	11,162	11,724	11,639	10,865	60 00
RepublicofMoldova	397	377	410	419	472	453	114.15
Romania	6,495	5,793	5,234	5,180	5,041	4,926	75.84
RussianFederation	13,412	17,231	18,816	19,081	19,546	21,506	160.24
Spain	24,884	25,342	25,495	26,567	28,367	29,231	159.91
Ukraine	6,466	7,576	7,577	7,764	7,350	7,079	109.48
U S A	60,975	64,887	64,775	67,776	68,389	71,500	117.26
Vietnam	27,434	27,373	26,261	26,761	27,750	29,075	105.98
China	428,505	476,237	482,248	480,095	471,550	456,773	106.59

Table 2**.** The evolution of meat production for the period of 2005-2016, thousands tons

Country	2005	2010	2013	2014	2015	2016	2016/2005
World	103,488	109,260	115,106	117,263	117,876	118,168	114.18
Belgium	1,915	1,925	1,130	1,118	1,124	1,060	104.43
Brasil	3,110	3,078	3,117	3,192	3,430	3,514	112.99
Canada	1,920	1,925	1,981	1,962	1,974	2,047	106.61
Denmark	1,793	1,668	1,589	1,593	1,600	1,579	88.06
France	2 ,018	2,,259	2,130	2,120	2,148	2,185	108.27
Germany	4,500	5,455	5,506	5,527	5,570	5,589	124.20
Italy	1,515	1,673	1,652	1,327	1,491	1,544	101.91
Mexico	1,103	1,174	1,283	1,290	1,322	1,376	124.75
Poland	1,956	1,894	1,775	1,864	1,976	2,008	102.05
Republic of Moldova	39	56	64	61	71	72	183.20
Romania	651	425	396	459	470	500	76.80
Russian Federation	1,520	2,307	2,81	2,973	3,098	3,368	220.90
Spain	3,168	3,368	3,431	3,555	3,8548	3,947	124.58
Ukraine	493	631	748	742	759	748	151.72
U S A	9,383	9,101	10,524	10,368	11,120	11,320	120.64
Vietnam	2,288	3,036	3,228	3,351	3,491	3,664	164.45
China	51,202	51,719	51,917	57,661	55,834	55,040	107.45

World Pork Production. In 2005, on the global level, 103.488 thousand tons of pork meat were produced vs 118.168 thousandtons in 2016, that represents 14.18% of increase. The global pork meat production leaders are China with 55.834 thousand tons, USA with 11.320 thousand tons and Germany with 5.589 thousand tons. The meat production in the described period, increased over 24% in Germany, Mexico and Spain. In Ukraine, Vietnam and Republic of Moldova, the pork meat production increased by over 50%, in Russian Federation - 120%.

At the same time, in some countries like Denmark and Romania the volumes decreased in the same period. As a result, the data reflected in the table shows a variable growth of meat production. This fact is explained by a different rate of intensive methods implementation, as well as usage performing genotypes in the production process (Cărătuș et al., 2016; Rotaru, 2013).

Table 3.Consumption of pork meat in the period of 2005-2013 (thousand tons)

Country	2005	2009	2010	2011	2012	2013	2013/2005
World	93263	103823	106282	106784	110568	112552	120.68
Belgium	364	364	394	386	447	429	131.59
Brazil	1902	2260	2408	2475	2513	2525	132.75
Canada	967	1027	990	1000	1006	961	99.37
Denmark	2391	107	126	102	333	291	121.75
France	2114	2194	2179	2128	2151	2125	102.52
Germany	4461	4437	4500	4433	4342	4286	96.07
Italy	2270	2390	2534	2436	2422	2457	108.23
Mexico	1411	1688	1700	1647	1772	1864	130.10
Poland	1982	2009	2033	2055	1831	1791	90.36
RepublicofMoldova	50	48	62	69	71	69	130.00
Romania	667	751	663	638	604	556	83.35
RussianFederation	2110	2848	3137	3258	3535	3671	173.98
Spain	2463	2218	2280	2247	2282	2296	93.21
Ukraine	545	685	739	801	929	930	171.27
USA	8734	8952	8692	8385	8552	8728	99.93
Vietnam	2281	3033	3027	3093	3151	3209	107.64
China	41644	48358	50009	50292	53248	54730	131.42

The Pork Consumption. The results presented in the Table 3 show that the pork meat consumption was equal to 112.552 thousand tons. This represents an increase of 20.68 % if compared with 2005 results. In Belgium,Brasil, Mexico, Republic of Moldova and China a 30-31% increase in the meat consumption was recorded, In Russian Federation – 73.98%. Even if the pork meat consumption decreased in Germany, France &USA, the total market demand is considerable in the period of 2009-2013. In these circumstances we can't neglect the population number of each of these countries, the larger the population the bigger is the consumption. In this case the better picture is offered by the consumption kg per person per year. This data is offered in the Table 4.

Table 4. Consumption of pork meat for the period 2005-2013 (kg/capita/year)

Country	2005	2009	2010	2011	2012	2013	2013/2005
World	15.00	15.42	15.61	15.5	15.89	16.02	106.8
Belgium	34.18	33.48	36.05	35.1	40.4	38.65	113.07
Brasil	11.85	11.68	12.33	12.57	12.65	12.6	106.32
Canada	25.22	25.82	24.45	24.43	24.28	*22.81*	*90.44*
Denmark	44.04	19.38	22.78	18.25	25.22	24.87	56.47
France	32.84	34.88	34.47	33.46	33.63	33.05	100.63
Germany	53.84	53.34	54.21	53.48	52.43	51.81	96.22
Italy	42.22	39.69	41.87	40.12	39.78	40.28	95.40
Mexico	13 53	14.50	14.42	13.80	14.66	15.23	112.56
Poland	51.20	48.73	50.23	51.24	47.03	46.19	90.21
RepublicofMoldova	13.22	13.26	17.25	19.46	20.34	19.83	140.54
Romania	30.11	33.53	29.58	28.4	27.38	25.31	84.05
RussianFederation	14.62	19.79	21.82	22.67	24.63	25.66	175.51
Spain	57.04	48.48	49.38	48.32	48.8	48.92	85.76
Ukraine	11.63	14.81	16.04	17.50	20.41	20.56	176.78
USA	29.37	29.07	27.99	26.81	27.21	27.64	94.10
Vietnam	26.82	34.39	33.99	34.39	34.7	35.00	130.49
China	34.91	34.91	35.89	35.82	37.73	38.6	109.78

The consumption of pork meat per capita on global level in 2013 was 16.3 kg, this represents an increase of 6.8% vs 2005. The largest numbers of consumption were recorded

in Germany - 51.81 kg, Spain - 48.92 kg, Poland - 46.18 kg, Italy - 40.28 kg, Belgium - 38.65 kg. The smallest numbers are for Brasil-12.6 kg and Mexico - 15.23 kg. The average consumption of pork meat in USA, Canada, Denmark, France, Romania, Republic of Moldova is over 20 kg. In Russian Federation, Ukraine an increase of 70% was recorded (Cărătuș et al., 2016; Găureanu et al., 2017).

Table 5.The evolution of meat productivity per animal in the period of 2013-2016 Hg/animal head

Country	2013	2014	2015	2016	2016/2005
World	792	798	803	799	100.88
Belgium	949	943	946	948	99.89
Brasil	859	860	874	883	102.79
Canada	947	961	970	976	103.06
Denmark	832	845	855	860	103.36
France	874	909	922	905	103.54
Germany	939	938	937	940	100.10
Italy	1262	1215	1319	1303	103.24
Mexico	763	785	808	819	107.33
Poland	876	861	909	909	103.76
RepublicofMoldova	817	720	775	774	94.73
Romania	826	811	816	837	102.44
RussianFederation	853	868	878	873	102.34
Spain	828	818	840	835	100.84
Ukraine	874	864	890	875	100.11
USA	938	969	963	957	102.02
Vietnam	702	710	685	717	102.13
China	770	774	777	769	99.87

The following productivity averages represented in Hg/head were recorded in the leading countries like Italy with 1303 Hg/head, Canada -976, USA - 957, Belgium - 948, Germany - 940. In other countries the productivity varies from 769 to 799 Hg/Head. In the described period (2013-2016) the productivity index didn't change in the following countries: Germany, Spain, Ukraine, China, Belgium. At the same time there was an increase in these countries: Canada, Denmark, France, Italy, Mexico, Romania, Russian Federation, USA, Vietnam (in average 2-7%). This demonstrates that the average weight of the animals delivered on the market was bigger.

CONCLUSIONS

Pigs `livestock during the period 2005-2016 globally has increased relatively continuously, in 2016 in comparison with 2005, the percentage of animalsincreased with 9.2%. The biggest amount of swine is in China which consists in 456.773 thousands of pigs, the total of 50% of a global amount. A big amount of swine we can find also in USA with a total number of 71500 thousands of pigs, in Brazil with 39 950 thousands of pigs and in Germany with 27 316 thousands of pigs.

During the period 2005-2016 the pork production has increased by 14.8% worldwide and in 2016 was consisted in 11816 tons of meat. The largest meat producers are China with 55834 tons, USA with 11320 tons and Germany with 5589 with an increase of 7-24%.

The global consumption consisted in 16.02kg per capita, which is a 6.8% increase compared to 2005. Germany consumes annually a 51.81kg per capita, Spain 48.92kg, Italy 40.28 kg and in Brazil and Mexico it is between 12-15kg per capita. In many countries such as: Canada, France, Romania, Denmark, Russia Ukraine the consumption is over 20kg per capita. China consumes around 38.6 kg of meat per capita.

The global productivity per animal Hg/animal head, in 2016 represented 799Hg/animal head. The following results were recorded in other countries like: Italy -1303Hg/animal head, Canada – 976Hg/animal head, USA-957 Hg/animal head, Belgium – 948Hg/animal head and Germany -940 Hg/animal head.

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