

# THE HEALTH STATUS OF PIG POPULATIONS AS A COMPETITIVE FACTOR IN GLOBAL TRADE OF PORK AND PIGS

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## Introduction

In the course of the last 20 years a significant increase in the concentration of production of swine and pork and international trade in these products and genetic material of reproductive animals, semen and embryos, is observed – world-wide. The mentioned changes are the result of demographic transformations occurring in a controlled equilibrium in the continents, influenced by the growth of wealth and requirements of their people in increasing number of countries. To the mentioned changes the drift from agriculture to agribusiness is also contributing to the observed variation in just defined area.

## Global pork production

Statistical data indicate that the world population rose by 2 532 836 485 within the last 35 years since 1970 to 2004. The number of people is now about 68% higher than 35 years ago. During the same period, pork production rose from 35 793 000 tons in 1970 to 100 392 230 tons in 2004; the resultant increase corresponds up to 170%.

**Table 1. The development of pork production in different continents and countries between 1975-2004 (x 1000 tons)**

Continent	Country	1975	1995	2004	Change ( %)
South America	USA	5217	8092	9332	79
	Canada	654	1257	1970	201
North and Central America	Brazil	760	2800	3110	309
	Chile	30	172	396	1220
	Mexico	810	921	1100	36
Asia	China	7995	33401	47752	497
	Vietnam	247	1007	1700	588
	Japan	1039	1299	1255	21
Europe	Germany	3939	3602	4366	11
	Spain	601	2174	3335	455
	France	1587	2144	2290	44
	Poland	1811	1962	2100	16

Source: FAO STAT

These data demonstrate a significant increase in pork meat consumption per capita. Calculations reveal that this indicator rose nearly by 60% within the last 35 years ( from 9.7 kg to 15.74 kg). The data presented in Table 1 show that the dynamics of pork production varies very widely with regard to both a continent and country. The above diversity results

chiefly from the dynamics of economic development, environmental conditions, labour supply, access to feed base, pig population density, varied economic effectiveness of production, rapid trade development on the world-scale, political conditions, etc. In addition, a significant role is also attributed to the strength of an individual currency mainly that of the dollar and euro.

**Global pork trade**

Various conditions and effectiveness of pig production and consequently various production costs (Table 2) are one of the main reasons for a rapid international trade developing with regard to pork, the food of animal origin and live animals.

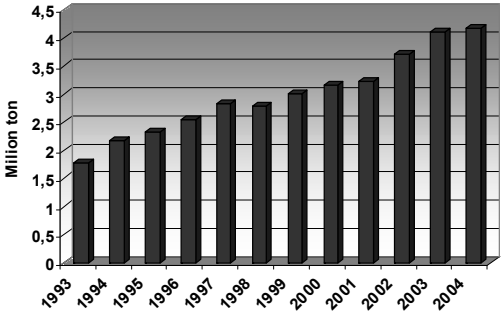
**Table. 2 Average price of carcass (1 kg) in different countries (2004)**

Country	Canada	USA	Mexico	Brazil	UE (15)	Great Britain	Spain
Price	1.00 \$	0.07 \$	1.25 \$	0.80 \$	1.25 €	150 €	1.15-1.25 €

Source: FAO STAT; USDA/NASS

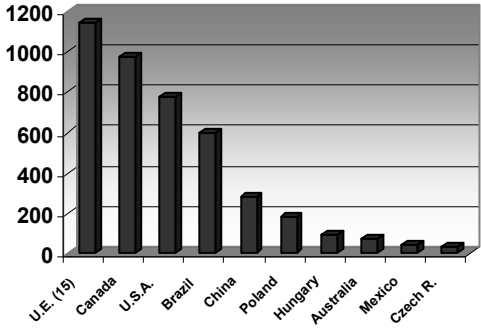
A development of the trade with agricultural products is bounded up with a progress in liberalization, which is presented notice able, among others, in the General Agreement on Tariffs and Organization (GATT) declared in 1994 and forming origin formation of the World Trade Organization (WTO) in 1995. The main aim of this organization is maximum reduction of international trade barriers. It may be stated that the dynamics of international pork and live animals trade development is markedly higher in comparison to that of global product growth. The data collected by the FAO for 12 last years (1993 to 2004) show that the export of pork increased nearly 3-times (Fig. 1). During that period the European Union, Canada and USA are the three leading pork meat exporters (Fig. 2) on the global scale. Their export corresponds to 65% of global pork meat dispatching.

**Figure 1. The development of world pork export between 1993-2004**



Source: FAO STAT

**Figure 2. Leading countries in pork export in 2004 (x 1000 ton)**



Source: FAO STAT

However, South America, especially Brazil, shows the highest dynamics of export rate (Table 3).

**Table 3. Changes (%) in world pork export between 1998-2003**

Country	Change(%)	Country	Change(%)
Brazil	474.3	Denmark	29
Australia	335.3	Czech Republic	25.9
Canada	125.5	UE	11.2
China	97.2	Mexico	-2.0
USA	39.6	Poland	-17.3
<b>World</b>	<b>45.4</b>		

Source: USDA/FAS

Undoubtedly, Brazil, Canada and the USA are the main competitors of the EU with regard to the world pork market. Denmark, the Netherlands and Canada, are the countries which export the highest part of their production (Table 4).

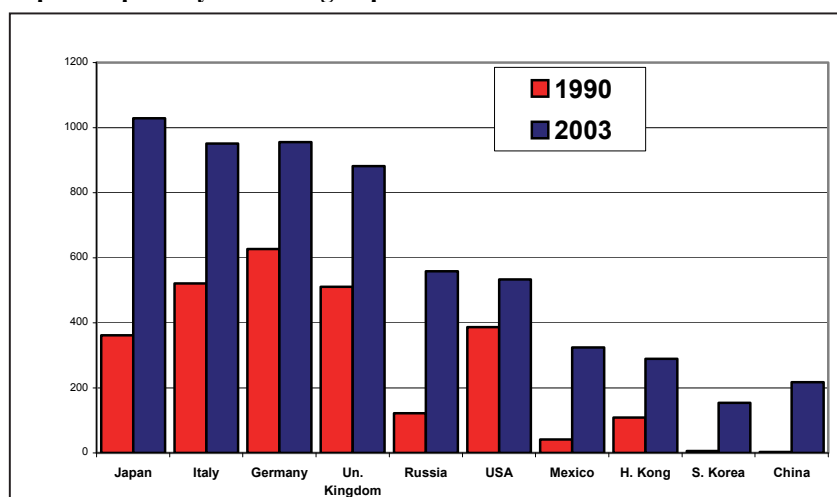
**Table 4. Percentage of pork export in 2003**

Country	Export (x 1000 ton)	Export as % of pork production
UE	2877	13.3
Denmark	1322	75.0
Canada	974	51.7
The Netherlands	868	69.4
USA	779	8.6
Brazil	603	23.6
China	282	0.6
Poland	217.9	9.9
Australia	74	17.6

Source: USDA/FAS

What is interesting, the ten leading exporters had up to 94.2% of the global export in 1990. In 2003, however, these top leading exporters controlled “only” 85.4% of the market which is considered a favourable tendency.

**Figure 3. Import of pork by 10 leading importers in 1990 and 2003**



Japan, Italy and Germany (Fig. 3) were the biggest pork importers at the global scale in 2003. It is worth noting that the ten leading importers have increased 3 times their pork import for the last 14 years. In 1990 they bought 2.29 million tons of the meat and 6.07 million tons in 2003. It is worth stressing that the 2.29 million tons mentioned above were attributed to 93.3% of global pork meat import in 1990 and 6.07 million tons in 2003 accounted for “only” 76.7% of the import.

### Global pig trade

The data shown in Table 5 indicate that living animal trade is a significant part of an international trade. The FAO information reveal that about 15 million pigs crossed the countries borders in 2003. Canada is the biggest exporter of pigs. This country sold more than 5.7 million porkers mainly to the USA. In Europe, Holland, Denmark, Spain and Germany have been the biggest swine exporters especially in 2004. Each of the countries exported more than 1 million animals. Among them Holland was the biggest exporter. The reproductive gilt and boar trade plays an increasing role in total pig trade. During last 20 years an annual increase in gilt export by the companies producing reproductive material has been each year higher than 20%.

**Table 5. Leading countries exporting and importing pigs in 2003**

<b>Export</b>	<b>Number of pigs</b>	<b>Import</b>	<b>Number of pigs</b>
Canada	5 741 363	USA	5 741 275
The Netherland	2 843 795	Germany	3 908 357
Denmark	2 021 186	Hong Kong	1 740 337
China	1 888 606	Spain	1 477 137
Spain	1 134 194	Italy	1 116 789
Germany	1 119 232	Portugal	804 791

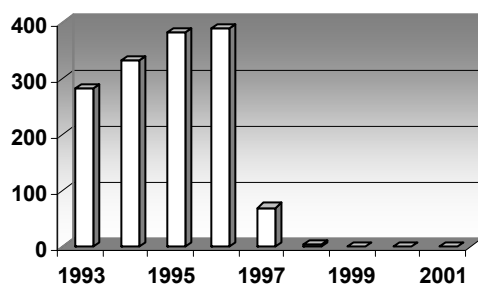
Source” FAO STAT

Health status as a competitive factor in global trade of pork and pigs. The export of pork involves relatively not many countries and still fewer countries meet the requirements for unlimited swine export. The criteria allowing to participate in an international pork and pig markets are mainly: the health status of a country or region that fulfils the requirements of the Office International des Epizootie (OIE), European Parliament, European Council and veterinary services of various countries, price, product quality, competence in coming up with the purchaser expectations, effective promotion and in some cases also political correctness.

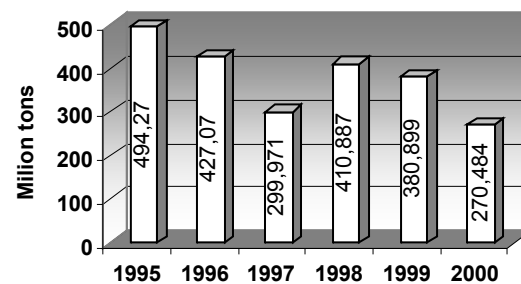
Undoubtedly, the health status of a country or a region especially concerning the swine diseases included in the OIE List A (foot and mouth disease – FMD, vesicular stomatitis, swine vesicular disease, African swine fever and classical swine fever – CSF) and some diseases from List B (Aujeszky’s disease, leptospirosis, trichinellosis, brucellosis, atrophic rhinitis, enterovirus encephalomyelitis, transmissible gastroenteritis) is a criterion which

decides about pork exports and its range. Without any doubts different regions and countries vary significantly in terms of wealth, priorities and infrastructure what makes very difficult to manage diseases status properly in many parts of the world. It is clear that any country is immune from the risk of notifiable diseases. Among others Great Britain, the Netherlands and Taiwan became convinced of this fact. The outbreak of CSF in the Netherlands in 2000 and the occurrence of FMD in Taiwan have declined their pork exports practically for many years (Figs 4 and 5).

**Figure 4.**  
Taiwan pork export; Taiwan broke with FMD in 1997 (x 1000 ton)



**Figure 5.**  
The Netherlands pork export; the Netherlands broke with CSF in 1997



It is clear that international trade in pigs, pork or other animal products (semen, embryos) depends on a combination of different factors. All of them should be taken into account to ensure unimpeded trade and exclude unacceptable risks to human and animal health. It is also true that importation of pigs and pork is connected with the risk of transmission of diseases to importing country. This risk is directly proportional to the amount of pigs or pork imported. The OIE International Animal Health Code provides guidelines and principles for conducting transparent and objective analysis for hazard identification, risk assessment, risk management, and risk communication.

It may be stated that the progressive globalization and activity of GATT and WTO support the development of international trade. This arises new challenges for individual countries and the international community. Thus, the institutions responsible for food and epizootic safety introduce mechanisms which oppose too far-gone liberalization. It will cause that the exporters of food and live animals can be practically allocated to the countries able to control the occurrence of the diseases from the OIE List A, to realize the program of zoonosis eradication and to evaluate the epizootic status in the country. Unfortunately, veterinary barriers built by some countries are not always supported by scientific researches and far more restrictive than the OIE recommends (Thiermann 2004). It may be thought that these

barriers are sometimes part of political or economic games. Still, a constructive compromise involving national veterinary services and organizations such as the OIE or UE Council is desirable. It is worth mentioning that recommendation of the International Animal Health Code says that “importing country should not include requirements for the exclusion of pathogens or animal diseases which are present within the territory of the importing country and are not subject to any official control program”. It seems that the veterinary barriers are and still will be an increasingly efficient tool for the protection of consumer health and animal population against dangerous pathogens. On the other hand, it is possible that some countries may use the barriers to protect their own markets. It is worth noting that according to the OIE International Animal Health Code the exporting country is entitled to expect that its animals and animal products will receive reasonable and valid treatment when they are subjected to import inspection in the country of destination. The country should also expect that any evaluation of its standards and performances will be conducted on a non-discriminatory basis. The importing country should be prepared and able to defend any position which it taken as a consequence of the evaluation.

According to the recommendations of the OIE, indispensable laboratory or monitoring examinations of determined pig populations, although very expensive, are a key element of all the programs. Without such examinations and respective documentary, pork and animal export will be impossible.

The regulation (EC) No 2160/2003 of the European Parliament and the Council of November 17, 2003 on the control of salmonella and other specified food-borne zoonotic agents are a good example. The program of monitoring examinations will involve brucellosis, campylobacteriosis, listeriosis, salmonellosis, trichinosis, tuberculosis, caused by *Mycobacterium bovis*, and verotoxic *E. coli* infection. The Directive is the legal base which obliges all the EU countries to elaborate and enforce the program of salmonellosis eradication among others in pigs. According to this Directive, the program of salmonellosis eradication in trade swine herds should be elaborated in all the Member Countries within 48 months after coming out and put into practice the mentioned regulation and no later than 18 months thereafter. A similar program considering reproductive swine herds should be prepared within 60 months and put into practice throughout 18 months. It should be stated that very high costs of the Directive may cause limitations in pig and pork trade.

The Council Decision of March 16, 1998 amending Decisions 95/409/EC, 95/410/EC and 95/411/EC concerning the methods for microbiological testing of meat intended for

Finland and Sweden (98/227/EC) is another example showing an influence of “veterinary regulations” on international swine trade. According to this Decision fresh pork intended for the above mentioned countries must originate from a slaughter house which performs the examinations towards salmonella, which are equivalent to those carried out in Finland and Sweden or must be examined microbiologically towards salmonella presence according to the respective directive. The Commission decision of March 31, 2004 amending Decisions 93/52/EEC, 2001/618/EC and 2003/467/EC as regards the status of acceding countries with regard to brucellosis (*B. melitensis*), Aujeszky’s disease, enzootic bovine leucosis, bovine brucellosis and tuberculosis, has a very significant meaning in this field. This Directive clearly says, that a country free of Aujeszky’s disease is not allowed to import pigs into its territory from countries where animals are affected with the disease or countries with unknown disease epizootic conditions. It means that for example Polish pig breeders and producers and those from several countries, who failed to eradicate this disease, are not allowed to sell animals to Member States or certain parts of the territory of the Community regarded officially free of Aujeszky’s disease. In the nearest future the Regulation (EC) 882/2004 of the European Parliament and of the Council of “Official Controls to ensure the verification of compliance with feed and food law, animal health and animal welfare rules”, may influence significantly a free trade of pork and live animals. According to the mentioned Regulation all the EU countries should have a many-year plan ready for control not later than the 1<sup>st</sup> January 2007. The plan should include the structure and organization of the system involving the safety of feed and food and the health status and welfare of animals, including pigs. It may be thought that in accordance with equal requirement rules, the countries competing to dispatch pork or pigs to the EU territory will have to keep to the respective requirements accepted by the member states.

The presented evidence clearly shows that both the producers and breeders of pigs and mainly merchants must be aware that the health status of pig populations will be a significant competitive factor for pig and pork producers. Therefore each exporting country should implement measures which enable to achieve the appropriate level of protection and ensure that negative effects on trade are minimized. Pork and pig producers have to keep in mind that an importing country has a right of assurance that information on zoosanitary situations provided by the Veterinary Services of an exporting country is objective, meaningful and correct. Furthermore, the Veterinary Services of importing country are entitled to expect validity in the veterinary certification of export.

Altogether, the risk connected with international trade must be managed appropriately, fulfilling obligations under international trade agreements. This will guarantee global development of pork and pig trade and position among pig and pork exporters.

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