



Practical Health Insight (49)

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DISEASES AT NO. 1

With everything that has happened recently there is no dispute left. Feeding and breeding efficiency were always high on the list but now disease control ranks an indisputable No. 1 when pork producers are asked what is the major cost on their farms and what worries them most!

What has changed? As always, it is a combination of factors. Most of these factors work independently from each other; some of them are related. However, they do enforce each other and that is the most worrying factor. Modern society has no tools to minimise the damage that disasters may cause. Major disruptions are all connected and exercising their influence in many parts of the world.

One of the first warnings that the world experienced was Spanish flu in 1918, which caused 40 million deaths worldwide. One single origin in a remote area in Belgium became a worldwide disaster. Another example with a worldwide impact is the financial problems that had their origin in Wall Street (USA) in the 1930s.

So nothing new. Disasters will occur from time to time and it seems that for a certain period little can be done to prevent global spread. Do we really need to take such a fatalistic position? Let us have a closer look at some recent examples of new or old emerging diseases and potential global spread.

PCV2 and PRRS virus are examples of a well-documented global spread because epidemiologists have more and more tools to trace back disease outbreaks to possible regions of origin.

In the case of PCV2 and PRRS, spread of the viruses was often connected to transport of live pigs from a certain part of the world, where the virus was already present to other parts of the world that were still free of that virus, or free from variants that were often more pathogenic strains.

With all the necessary documents, these pigs could officially be transported from their home place to the receiving area. Diagnostic techniques were either not available, not sensitive enough, or the wrong samples were used. This resulted in a false negative status of the animal and the pathogen was transported from an infected region to a 'free' region.

Once present in these regions the virus had all the freedom to develop into more pathogenic variants, for

example High Pathogenic PRRS in China, when the local conditions made this possible.

PED is another example of unintentional spread with dramatic consequences. Whereas PCV2 was mainly transmitted by live pigs, and PRRS mainly by live pigs, air and fomites, PED opened our eyes for other ways of pathogen-virus-disease transmission.

The increased level of international trade is a concern for all these viruses. Raising and feeding pigs is based on materials that have their origin all over the world, for example genetics, feed and feed ingredients.

When there is contact, cross-transmission of unwanted and undesired material can easily happen. Every virus has its own preferred conditions for travelling. FMD virus, for example, is a virus where airborne transmission occurs frequently, next to contaminated carcass materials.

With the right temperature and humidity conditions FMD virus can travel large distances and the route is determined by the prevailing wind. This method of covering large distances does not just apply to viruses. In the case of (human-) antimicrobial resistance genes, large distances can easily be covered by healthy carriers and by simple contact to create the right circumstances to cross-over these resistance genes to other people

that are, or were, free of these genes. International travelling, re-allocation of people due to international turmoil, economic refugees; the world can easily become a global village in which the same pathogens and resistance genes are present everywhere. Society has developed an infrastructure that makes this all possible.

With all this in mind, is there nothing the industry can do to stop the spread of disease?

Focus on ASF

Maybe the question posed above is most urgent when considering ASF. Here spread has taken colossal proportions. The world pork supply is suddenly at stake. If China does not find a new balance between production and consumption and is required to import roughly 10-20% of its pre-ASF pork quantity, a worldwide shortage of pork will emerge as a result.

The pork producers outside of China will not be allowed, or simply cannot, produce the extra 50-100 million pigs that China might require in that scenario. When ASF continues to spread in countries where it is present now or even infects new countries, the global supply issue will only worsen.

So what is the world currently doing? Free countries try to remain free by increasing their internal surveillance and their border control. Infected countries try to control the ASF situation in their country but only few have reached that stage.

And control comes first before you can even start thinking about

eradication (see Czech Republic, with Belgium hopefully following).

But are infected countries doing enough to prevent possible ASF virus infected meat, or other materials leaving infected farms, infected meat processing plants or even their country? How is it possible that so often ASF virus infected (or processed-) meat is confiscated at international airports or harbours?

Two recent examples concern travellers to Australia where biosecurity officers discovered undeclared pork and food items in their luggage.

Supported by new Australian biosecurity laws, a lady had her visitor visa cancelled for failing to declare the 4.6kg of pork in her luggage, among other food stuffs like 470g of eggs, along with kilograms of quail, pate, fruit, garlic and squid.

When boarding, every passenger needs to pass security to have their hand luggage checked. On board luggage is also checked.

It is almost impossible that any serious control at the airport of departure would have missed this amount of potential dangerous material, when the country of departure is an ASF infected country (which it was).

It is generally accepted that international travel is the major source of spread for ASF virus. It is also accepted that the only way to stop ASF from spreading is biosecurity.

Biosecurity has two important aspects:

- Keep the virus away from ASF-free farms, regions or countries.
- Keep the virus inside infected premises, processing plants, regions or countries (so called containment).

This is followed by proper destruction of ASF-containing material, cleaning, disinfection and monitoring for ASF freedom before re-starting, to prevent further spread. Both aspects must have the same level of priority.

It is time that institutions like the WHO, OIE and FAO urge ASF infected countries to take more responsibility to prevent leakage of ASF virus at their borders!

Free countries will, of course, take their own measures but it is an enormous task. It is a global responsibility that they are supported by measures taken at any port of departure, for goods and persons alike, in ASF virus infected countries!

Control at borders to contain ASF should be an important task for both countries of origin as well as the receiving countries.





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THE FUTURE OF PORK PRODUCTION

With China losing 50% of their production, global pork production faces a completely new situation. Hopefully China will control the ASF epidemic and successfully restock the empty barns. But if not, and only a part (maybe 10%) of the culled pigs are replaced and when domestic demand for pork declines by 15%, it still means that the other 25% needs to be imported. Is that feasible?

The bigger picture

Generally accepted forecasts are that the human population will continue to increase and that the agricultural output needs to rise continuously to satisfy the growing (urban-) population.

Therefore the forecasts always predict a steady growth (see Fig. 1). But the reality in 2020 is that the chart shown is now outdated. In 2019 pork production declined with an estimated 15-20% on annual basis and not the predicted increase of 1%. Animal protein production is normally in balance with demand.

Overproduction leads to lower (ex-farm) prices, higher demand to higher prices. When the balance is disrupted the producers react and within a reasonable time the balance is restored again. The question now is if the world can handle a disrupted balance of this magnitude.

50% less pork in China means 25% less pork in the world. Can the rest of the world compensate for this loss in production and restore the balance? Let's have a look at China itself and to the other pork producing countries and continents.

China

China is a country of the very large and the very small. China has the lowest ratio between arable land and water per capita but China also has the highest number of pigs and the highest number of cities with more than eight million inhabitants. This discrepancy comes with a cost. Environmental pollution caused by pig farms is a major issue in China.

Many farms were forced to close down because of non-compliance with new environmental rules and regulations. Water consumption needed for pork production is in fierce competition with water for a growing urban population.

Water deviation projects using canals, more than 3,000km in length, for transporting water from the South to urban areas in the North, are not there to raise more pigs.

A large part of pork production is still in the hands of small farmers having little financial resources to move the industry forward. In short, ASF provides the opportunity for the Chinese to restructure their pork producing industry. Most likely the number of backyard farmers will be reduced and the total pork production will be aimed at a level that the country can sustain.

The remainder of the pork needed to fulfill the urban demand will be imported. Countries are lining up to supply China and China can choose their friends. How much they will import is difficult to predict but could easily be 25% of their pre ASF required needs. To counteract, the government advised their citizens to eat more poultry and ducks. The question is whether the world outside of China can produce the extra 25% that China might need? Time for a quick look at what the rest of the world can do.

Rest of Asia

As it looks now, China can expect little support from the neighbouring Asian countries. ASF continues to spread and kill pigs on a large scale, with Vietnam as a dramatic example. It looks like all countries will get infected, slowly and one by one.

The recent examples of ASF virus-infected pork seized at airports or harbours in the Philippines, Australia and Taiwan shows how difficult it is to make the general public aware of the dangers connected to processing and transporting ASF-infected pork. It is a ticking timebomb for the ASF-free countries in Asia.

The Americas

20% of the global pork production takes place in North and South America. North America has a good future to supply pork to China when they invest in the capacity to handle the extra number of pigs produced. In 2019 the USA produced roughly 6% more slaughter pigs.

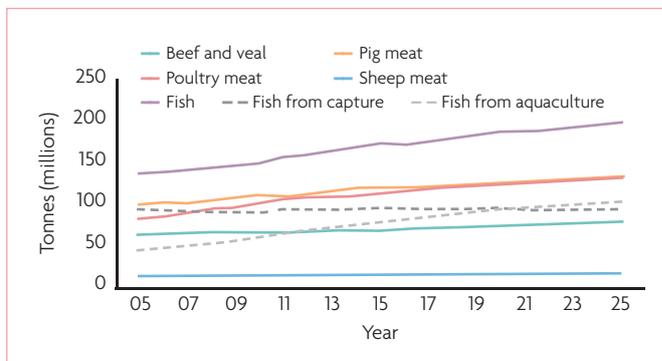


Fig. 1. The original forecast (OECD-FAO) predicted steady growth, but in 2019 the drop in global pork production was actually in the range of 15-20%.

This led to lower ex-farm prices because the meat processors did not have the capacity to slaughter these extra pigs. Farmers should consider themselves happy to have their pigs accepted by a slaughterhouse.

Of course after processing these extra pigs, the meat was sold by the meatpackers for higher prices to China. This will not stimulate pork producers to do the investments that are needed to help China. The 6% more pigs (for the USA 6 million pigs) sounds nice but when China needs to import 125 million pigs (25% of pre-ASF 500 million pigs), this six million pigs is only 4% of what China needs.

So the Americas can help China but that needs a concerted effort which is always difficult to get organised when a free market exists. Only real integrated companies owning both the pigs on farm and the processing plants can make a real difference.

Africa

The home continent of ASF stands little chance to help the world with extra pork production. It would already be great if the local demand for pork could be met with local production. The infrastructure needed for large scale pork production is simply missing in most countries. It will take an enormous effort to get the infrastructure in place and several generations to get it completed, although there are African countries that are making good progress in pork production.

Europe

In Europe all the variables are present. The Eastern part of Europe can be 'the' source of pork when the

infrastructure for pork production is up to modern standards. Romania, Bulgaria, Poland, and the Baltic States, are just a few countries with a great pork producing future. Reliable production figures from Russia are difficult to get but from a major pork importer, Russia came close to self-sufficiency before ASF struck. This is an example of what the potential is in the region. They all have a history in pork production, a strong domestic (pork-) demand and plenty of arable land, water and labour. You do not need more, it is just a matter of getting organised.

Western Europe is, of course, a different matter.

Undoubtedly the expertise to get large numbers of piglets per sow per year to the processing plants is there. Despite high production costs, pig farming can still be profitable. But to help China produce the amount of pork they need, it is very questionable whether Western Europe will be of any substantial use.

Although Spain and Germany both provide 18-20% of the current China imports, environmental problems, animal welfare issues and other consumer demands make life difficult for pork producers in Western Europe. Reduction in pork numbers (-1.8% for 2018-2019 in the EU) is more likely to happen than an increase in production.

The quote of a pig farmer in a Dutch newspaper tells it all: "Why should I produce pigs for China with feed from South America?"

The trend in Western Europe is towards regionalisation and sustainability.

Summarising the future? A global shortage of pork with higher prices providing more money for the industry but nobody can tell for how long!