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RISK MANAGEMENT DECISION: SOUTH AFRICA'S EXPERIENCE
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Background

South Africa has been importing pork since 1994, and quantities have been increasing since.

The country has been regarded free of a number of pig diseases that are endemic in some countries, including Porcine Reproductive and Respiratory Syndrome (PRRS). Initially this was based on historical freedom and the fact that the disease has never been reported.

PRRS was introduced into the country on three occasions, in 2004, 2005 and 2007. On two occasions, 2004 and 2007, we actively eradicated the infection; on the third case it was a co-infection with the Classical Swine Fever (CSF) outbreak of 2005 and eradication of CSF also eradicated the PRRS.

A total of about 12 000 pigs were slaughtered and about 14 000 were culled. This cost the country R6.2 M (about EUR 0.5 M). With the 2007 outbreak, a total of about 7 000 pigs were slaughtered and 2 500 were culled at the cost of R 3.5 M (EUR 0.3 M).

Upon investigating the source of the outbreak, we could only conclude that it was from feeding legally imported swill for the following reasons:

- The area where the outbreak happened does not use imported semen and pigs.
- Despite this, the import requirements for both live pigs and semen had measures sufficient to mitigate the risk of importing PRRS.

In 2009, a nationwide surveillance on a number of pig diseases was conducted, and this included PRRS. Following this surveillance we could declare the country free of PRRS and had to put measures to prevent its re-introduction.

Risk Review

South Africa opted to use existing risk analysis conducted by Biosecurity New Zealand (MAF) in 2006 and the EFSA Scientific Opinion of 2005 as the main documents, we thus called it a risk review.

The EFSA report, concluded that "infectious PRRS virus in fresh pig meat may constitute a hazard when exported from a country or region with PRRS to a country with a naïve pig population", and South Africa has a completely naïve population.

The release assessment pointed out that the virus is stable at temperatures of -70°C to -20°C and can remain infective for month to years, the virus can still be detected after 30 days at 4°C. At 20-21°C the PRRS remains infective for 1-6 days and at 37°C for 3-24 hours.

It was also found that PRRS is most stable at a pH of between 5.5 and 6.5, which corresponds to the pH values of pig carcasses after maturation, thus maturation does not inactivate the virus.

Another important finding was that vaccine-like strains were isolated from the meat samples and that these vaccine-like strains were also capable of causing infection after ingestion. With most countries vaccinating their herds, combined with the effect of vaccine masking clinical signs, the risk to South Africa becomes magnified.

Another research found a low, but significant, proportion of meat samples taken at abattoirs were still positive of virus presence.

With South Africa importing over 40 tons of pork annually, the amount of possibly infected pork imported was unacceptably high.

Exposure assessment indicated that the oral infection has been shown to occur by numerous studies and the minimum oral infectious dose is not known. Though this can be mitigated by prohibition of swill feeding, the feeding of swill in certain sectors of pig owners cannot be prevented and it is accepted worldwide that legislation regarding the feeding of swill to pigs is difficult to enforce, thus there is a high likelihood that scraps of pork will be ingested by pigs in South Africa.

The consequence of introducing the disease will directly affect pigs, and pork production; while the indirect consequence is with regards to disease control efforts and trade barriers.

Risk Management

The safest measure, which would have been most trade restrictive, would have been to prohibit all imports of raw pork except, fresh or frozen, and only allow imports of processed products where the virus would have been inactivated.

Instead, the following mitigation measures were considered to be most effective, while being less trade restrictive:

- **To import from PRRS free countries/compartments.**

The challenge was that there were only a handful of countries that could prove PRRS freedom. Most trade partners living with PRRS vaccinate their animals and thus compartments were also not a possible option.

- **To import processed products where the virus would have been inactivated.**

It was later decided to add to this, group cuts that are consumer ready, and which do not have to be handled further in the country with the likelihood of having off-cuts.

The idea here is to have high value cuts that are least likely to find their way into swill, or with little trimming prior to preparation where the trimmings would find their swill. The predefined cuts must have no excessive connective tissue and thus no lymph nodes.

- **To import product for further processing in the country, post arrival, to make them safe.**

This consideration was aimed at reducing the negative trade impact and to enable the industry to process the meat to their individual market specifications.

During this process, the Vet Authorities had to understand the industry, in particular their needs with regards to processing of products (consumer demands) as well as understand the critical control points where the risk lies. This enabled us to manage the risk better, with as minimal interruption to normal trade as possible while safeguarding the health of the national herd.

The impact on trade needed to be considered, and a balance found between affecting trade and protecting the national population. In order to minimize trade, trade partners as well as the industry were consulted and their proposals considered and evaluated against the level of protection South Africa deemed appropriate.

Challenges: as with any change, society does not take kindly to change, and this was no different. Trade partners questioned the measure, importers and producers objected to the burden put on them.

Lessons learned: risk management differs from occasion to occasion, and a number of factors need to be considered to ensure its practicality; from an implementation process, ensuring that there are enough resources to check for compliance to financial impact on the regulator, as well as the trade.