The threat of African swine fever

How is the APHA monitoring the risk of African swine fever and what procedures would be implemented should the virus reach Great Britain?

The International Disease Monitoring team is an important group within Defra’s APHA. Its function is to keep an eye on exotic new and notifiable animal diseases around the world and make assessments of the risks that they pose to the UK’s livestock industries. It provides advice and recommendations to APHA and wider government on this subject as well as publishing information for the general public.

Intelligence data are gathered from a number of sources, including official reports to the OIE (World Organisation for Animal Health) and the European Union. EU Member States with exotic notifiable disease outbreaks make regular presentations to the Animal Health and Animal Welfare section of the Standing Committee on Plants, Animals, Food and Feed (SCoPAFF). This information is frequently reviewed by the International Disease Monitoring team. The team also uses unofficial sources, such as Pro-Med email alerts, local media reports and personal contacts, which provide the remainder of the information and help to give an accurate picture on the ground.

Monitoring the disease

In the case of African swine fever, the official reporting system provides the basis for regularly updated maps of the westward spread of disease across Europe from the Caucasus area over the past 11 years. The latest map is shown in Figure 1.

These maps show recent confirmed cases of disease in domestic pig herds and feral wild boar, which are also being proactively sampled and tested for African swine fever. Some EU countries pay hunters to shoot and submit wild boar carcasses, while others just rely on finding dead animals to test.

There are more wild boar carcasses submitted in EU Member States because there is an active surveillance programme in place. Some other countries outside of the EU have lower levels of surveillance, and case numbers are reduced as a result. This doesn’t mean that they are free of disease, just that it has not been detected and reported. It is important to bear this in mind when viewing the map in Figure 1.

As can be seen, there have been some long-distance jumps of disease, and in these cases, human involvement is suspected as the most likely transmission route. This may have been through indirect spread by vehicles or equipment or, more likely, by the inadvertent feeding (or scavenging) of infected meat products to wild boar.

The protocol following an outbreak in Great Britain

If an outbreak of disease was detected in Great Britain, pigs on the affected farm would be culled immediately and epidemiological investigations initiated. This situation is covered by the various country Exotic Disease Control Strategies, which state that movement restrictions are to be immediately imposed on suspect premises and if disease is confirmed, Protection and Surveillance Zones will be applied.

One of the first on-farm actions that would be undertaken is the blood sampling of a proportion of the different groups of pigs on the infected premises at slaughter. By looking at the levels of virus and antibodies present in the samples, a picture would emerge of the order in which the groups had been infected and approximately when the virus had entered the pig herd.

Armed with an estimate of when the disease is likely to have entered the herd, disease tracings time windows can be identified. Tracings would be initiated for both the potential source and spread of infection. In other words, we would want to find out where the virus had come from and where it might have gone to.

Tracings deal with many different potential pathways and this is especially important with African swine fever virus, as it can survive in the environment for several days. As a result, we would want to trace vehicles, equipment, manure, carcasses and people, as well as, most importantly, any live pigs that had left the infected premises during the spread tracing window.

In the case of source tracings, we would also be looking at movements of similar items (pigs, vehicles, equipment, visitors) onto the premises during the potential source tracing window. In addition, this would include a check for any feeding of or access to infected meat products, as well as usual sources of feed and bedding and an assessment of wildlife in the area. A final route to consider would be...