African Swine fever (ASF)

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CONTROL / PREVENTION

Since there is no vaccine, prevention of ASF relies upon implementing strict biosecurity measures that will prevent contact between the ASF virus and domestic pigs. On account of both the high mortality caused by ASF and the drastic measures required to control outbreaks, prevention is extremely important. Fortunately, since ASF is not an air- or water-borne disease and the infective dose is fairly high, the biosecurity measures required are relatively simple. Where the sylvatic cycle is the main source of infection, prevention relies on keeping pigs in pig-proof premises to avoid contact with warthogs and their tampans. In the infected zone in South Africa this is achieved by double fencing to ensure that even if warthogs approach the outer fence any tampans that might drop off them would not cross the space between the two fences. A solid wall will also offer adequate protection. The most important factor is that a pig-proof fence implies that it extends below the soil surface sufficiently to prevent pigs (wild or domestic) from digging their way through under the fence. The existence of accredited pig farms that have never experienced ASF in the control zone in north-eastern South Africa where the warthogs are infected bears witness to the success of these measures. It is underlined by the fact that when pigs in the control zone are allowed to roam freely, or are kept in facilities that are not adequately pig-proofed, ASF is almost inevitable.

Road blocks are important to prevent movement of pigs and pork products but its efficacy may be very limited in the circumstances that prevail in large parts of Africa
In countries with or without the sylvatic cycle, where outbreaks are more frequently caused by movement of infected pigs and their products and scavenging or swill feeding, additional measures are required. Although controlling the movement of pigs and their products in areas where ASF is endemic is strongly recommended, in practice this is extremely difficult. Heavy traffic on roads and the potential for off-road movement prevent adequate control even if resources to implement it are available. It is therefore important to emphasise that the safety of pigs depends on the will and ability of their producers to protect them with on-farm biosecurity measures. These consist of limiting access to the pigs, providing at least a change of footwear to people who have to enter the area where the pigs are kept, and not feeding swill that could contain uncooked or under-cooked pork unless it has been thoroughly cooked first. While disinfectant foot baths have a place in on-farm biosecurity, because in multi-house facilities the provision of new footwear for each house would be impractical, it must be recognised that these alone are not enough. If disinfection is not accompanied by the removal of organic material from the soles of footwear, it will fail to inactivate ASF virus within the material. Footbaths should therefore be provided with a rough mat, preferably a metal scraper, as well as fresh disinfectant at the right strength daily. Disinfectants that are effective against ASF virus include 2% caustic soda (NaOH), 2% sodium hypochlorite, and various registered commercial virucidal products. Detergents are also effective because they destroy the lipid envelope of the virus. Clearly, in order to apply biosecurity measures, producers have to confine their pigs. This is generally not attractive to producers accustomed to low-input traditional pig production systems where the pigs largely fend for themselves. Their willingness to change will depend largely on market incentives, social pressure, and the availability of support and information to enable them to construct affordable but adequate housing, feed their pigs economically, and maintain an acceptable level of hygiene to prevent the diseases that come with confining pigs.

In the acute form of the disease death occurs in 2-9 days in 90% of cases.

Once a diagnosis of ASF has been confirmed, stamping out of all affected and in-contact pigs should commence. Deep burial and/or burning is recommended so that the meat is not consumed.
Following stamping out, all carcases are disposed of by deep burial and disinfection of the premises

For commercial farmers with good facilities, the concept of compartmentalization (http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.08.01ASF.pdf) opens the way for them to be able to access export markets even in areas where ASF is endemic. The OIE accepts and describes the principle of compartments that are free of one or more diseases but the guidelines for the measures to be applied should be developed by national authorities in collaboration with the industry.

In the event of an outbreak of ASF, as in the case of most highly contagious diseases, the recommended measures are quarantine, movement control and eradication by ‘stamping out’ of all infected and in-contact pigs, with destruction of the carcases. The exercise may be extended to include all of the pigs in a defined area, whether or not they are infected. The success of these measures depends on early diagnosis of the disease, adequate resources in terms of people and equipment to apply the measures, and enough funds for rapid payment of market-related compensation for healthy pigs slaughtered. Delayed diagnosis usually results in spread of the disease with multiple foci to be controlled and many pigs to be killed, and even when the spread is limited, few developing countries have the resources to apply the measures effectively enough to prevent increased movement of pigs in order to avoid them. It is furthermore increasingly argued that ‘stamping out’ wreaks more damage than the disease itself, and is ethically, environmentally and aesthetically unacceptable. Without rapid and market-related compensation, it also serves as an imperative for clandestine movement and sale of pigs. Where export is not a consideration, most countries resort to at most ‘modified stamping out’, killing only sick animals and allowing those that survive to live. Since there is no long-term carrier state in domestic pigs, this does not necessarily prolong the course of the outbreak, provided the owners understand that they should not sell pigs from an infected herd and should not bring in new pigs for at least two months after the outbreak. If this method is adopted, it is vital that the animal health officers visiting farms observe strict biosecurity practices to avoid carrying ASF from one farm to another. The cooperation of pig producers is key to the success of modified stamping out, and depends on their understanding the way in which the disease
spreads and how this can be prevented. If owners of infected herds agree, stamping out the entire herd may be a safer approach, but the wholesale slaughter of all the pigs in a defined area is not justified because ASF is not directly transmitted over distances. Where healthy pigs are slaughtered within infected herds, producers may agree to compensation in the form of nucleus breeding stock once the outbreak is over.

Small scale pig farmers being informed that ASF can result in rapid spread of disease and socio-economic hardship

Awareness creation is important to impart knowledge about the impact of ASF and methods to prevent the introduction of the virus into a region

The OIE recommends that premises be kept free of pigs for 40 days before restocking, but in practical terms this depends on circumstances. It can be much shorter if the premises are isolated and there is no active ASF close by, whereas it may be longer if the disease is still prevalent in the area. Producers who wish to resume pig farming are advised to introduce sentinel pigs at approximately 10% of the stocking rate with access to all parts of the piggery. If they have shown no sign of disease after 4 – 6 weeks the premises can be considered free of ASF virus and more pigs can be introduced. Where tampans in pig sties are involved in maintenance of ASF, as occurred in the Iberian Peninsula, the situation is more problematic. Tampans can survive and remain infective for up to five years in a dormant state, and an outbreak occurred in Portugal in 1999, five years after eradication was complete, when pigs were introduced into sties that had been unoccupied for the entire period post eradication owing to the presence of tampans. Acaracides are generally not effective in freeing premises of tampans, and burning down the structures is recommended.
Video link: http://www.youtube.com/watch?v=CIV-tviZbUc