



# African Swine Fever

African Swine Fever (ASF) is an infectious disease of domestic and wild pigs, caused by a virus that produces a range of clinical signs. Soft ticks of the *Ornithodoros* genus, especially *O. moubata* and *O. erraticus*, have been shown to be both reservoirs and transmission vectors of ASF virus (ASFV). Pigs are the only domestic animal species that is naturally infected by ASFV. European wild boars and feral pigs are also susceptible to the disease, exhibiting clinical signs and mortality rates similar to those observed in domestic pigs. In contrast African wild pigs such as warthogs, bush pigs and giant forest hogs are resistant to the disease and show few or no clinical signs. These species of wild pig act as reservoir hosts of ASFV in Africa<sup>i</sup>.

Acute disease is characterised by high fever and haemorrhages in the reticuloendothelial system. The mortality rate can be as high as 100%. ASF symptoms vary but often include a high fever, decreased appetite and weakness. The skin may develop black lesions or become red or blotchy. Some pigs may experience diarrhoea, vomiting, coughing and difficulty breathing. Pregnant sows may also abort. Death usually occurs between 7-10 days after signs of the disease. However, sudden death without any symptoms can occur. Pigs that recover will be carriers of the virus for several months.

Warthogs, bush pigs and giant forest hogs do not normally show clinical signs of the disease but can pass it on to other pigs.

This disease is very contagious and spreads quickly through contact with an infected animal or a tick that has contracted the virus. It can also be passed to a herd by feeding uncooked or undercooked swill containing contaminated pork products. Once a pig is infected, the virus can be spread through direct contact with infected pigs or indirectly through contact with contaminated vehicles, equipment, footwear or clothing. The virus is highly resistant to environmental conditions and can survive for various lengths of time in blood, faeces, pig pens, meat, salted and dried hams and in frozen carcasses.

African Swine Fever is endemic in much of sub-Saharan Africa. The highest incidence of the disease is seen from the equator to the northern Transvaal<sup>ii</sup>. There is currently no vaccine or treatment available for ASF and current control methods include spraying with acaricides to control ticks, isolating new or returning pigs from the herd, food scraps fed to pigs should be cooked to at least 70 degrees C for 30 minutes. Healthy pigs should not have contact with feral or domestic pigs thought to have the disease, quarantine and depopulation of affected animals.

GALVmed is working with the Pirbright Institute to investigate the safety and efficacy to proof of concept of a novel vaccine for the prevention of ASF. Growth of the candidate vaccine strain to useful titres for research purposes is a challenge, and therefore a complimentary activity is to secure access to a permissive continuous cell line that offers the potential for production of adequate virus to complete the research activities, and potentially is a way into commercialisation of a whole virus-based vaccine.

<sup>i</sup> Sanchez-Vizcaino, J.M., 2006. African swine fever. Diseases of Swine, 9th Edition. Blackwell Publishing.  
<sup>ii</sup> [http://www.cfsph.iastate.edu/Factsheets/pdfs/african\\_swine\\_fever.pdf](http://www.cfsph.iastate.edu/Factsheets/pdfs/african_swine_fever.pdf)

Through our support for the development of a widely available vaccine for ASF we will be offering an alternative to culling, which is currently the only method for the control of an ASF outbreak, and which is culturally and financially challenging. Routine use of the vaccine would reduce losses from ASF for individual pig owners, and over time have an impact on the risk of exposure to the virus in the field.



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