

African swine fever: a review

Information summarized from the OIE webpage.

Keypoints:

- Recent outbreak of African swine fever in china may have influence in the global trade market of pork during the following months.
- Prevention focusing on imports and international movements is the best strategy in absence of a vaccine.
- Rapid diagnostics and culling are key components of an effective eradication.

After the recent outbreak of African swine fever in China and the implications for international trade, swine health, and production we thought it would be a good idea to review the characteristics of the disease.

INTRODUCTION

African swine fever (ASF) ranks third as a potential risk that could threaten the US swine industry in the swine disease matrix, from the Swine Health Information Center (SHIC). ASF is a highly contagious disease that causes hemorrhages in pigs. It is caused by a DNA virus from the Asfviridae family. It affects pigs, warthogs, and European and American wild boars.

CLINICAL SIGNS

Clinical signs vary depending on the virulence of the virus. Severe infections can cause up to 100% mortality in 2-7 days with high fever as the main characteristic. Other relevant clinical signs are bleeding (nose or rectum), diarrhea, redness of ear, abdomen, or leg skin, respiratory disorder, loss of appetite and depression. Moderately virulent strains cause less intense symptoms as the beforehand mentioned but mortality can still range between 30-70%. ASF can also be found in a chronic form with loss of weight, discontinuous fever, respiratory signs, skin ulcers and arthritis.

DIAGNOSTICS

Appearance of clinical signs and high mortality rates may trigger suspicion of ASF but confirmation has to be done through laboratory test. Differential diagnosis includes classical swine fever (CSF), high pathogenic porcine reproductive and respiratory syndrome (HP-PRRS), swine erysipelas, septicemic salmonellosis and porcine dermatitis nephropathy syndrome (PDNS).

Diagnostic techniques include detection of antibodies in serum or the etiologic agent in different tissues (blood, spleen, lymph nodes, tonsil and kidney). Isolation, PCR, Haemadsorption test and Antigen detection by fluorescent antibody test are the techniques for the virus identification.

EPIDEMIOLOGY

The warthog is the main reservoir of the disease and it transmits from pig to pig through a soft tick. Wild boars and other wild pigs can also carry and spread the disease. Domestic pigs usually become infected through direct contact with sick pigs or eating pig meat containing ASF virus. Also indirect spread can occur through contaminated vehicles, premises, equipment or clothes.

PREVENTION AND CONTROL

No treatment or vaccines are available at this point. Therefore the best strategies are implement strategies to avoid the introduction of the virus is to focus on import policies and movement of vehicles and people from infected countries. Rapid diagnosis and culling are the key features of a successful eradication program along with surveillance, movement controls, cleaning, and disinfection of the affected premises.

CURRENT SITUATION

Since the disease landed in Georgia in 2007 ASF has made steady progress through Europe. Latvia, Lithuania, Poland and more recently Hungary are the last countries that reported the presence of the disease in Europe (Figure1). The outbreak occurred in one of the most swine dense regions China, relatively close to the Korean peninsula. A second outbreak has been reported to date. The effects of the outbreak will probably shape the global trade of pork in the following months.

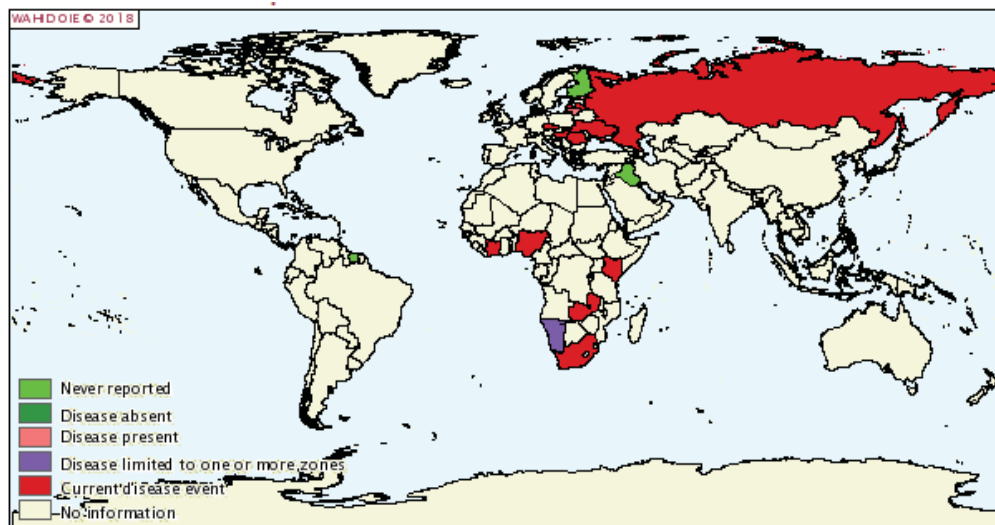


Figure 1. Countries affected by African swine fever according to the OIE before the Chinese outbreak.

More info at: http://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/Disease_cards/AFRICAN_SWINE_FEVER.pdf
<http://www.oie.int/doc/ged/D13953.PDF>

Find more MSHMP science pages at: <https://z.umn.edu/SciencePages>