



Case Definition

African Swine Fever (ASF) (Notifiable)

February 2022

1. Disease Information¹

1.1 General Disease and Pathogen Information: African swine fever (ASF) is an infectious disease of both domestic and wild pigs caused by the African swine fever virus (ASFV), the only member of the *Asfviridae* family. It can be transmitted through direct or indirect contact or by ticks of the genus *Ornithodoros*. Infection can be peracute, acute, subacute, or chronic. Pigs that recover from infection can become persistently infected carriers of the virus.

1.2 Clinical Signs:

1.2.1 Peracute: Caused by highly virulent strains. Pigs are typically found dead, sometimes without clinical signs of disease or any post-mortem lesions.

1.2.2 Acute: Caused by highly virulent strains. Clinical signs include fever, increased pulse and respiratory rate, lethargy, anorexia, and recumbency. Jaundice, vomiting, bloody diarrhea, eye discharge, bloody nasal discharge, and abortions may be observed. Pigs commonly exhibit reddening, hemorrhage, and/ or petechiation of the skin. One to two days before death the pig may develop anorexia, depression or listlessness, cyanosis, and incoordination. Death occurs 2-13 days after infection. Mortality rates approach 100 percent. Commonly seen post-mortem lesions include enlarged, and often friable spleen, enlarged liver, renal petechiae/ hemorrhages, hemorrhagic and enlarged lymph nodes (most commonly gastrohepatic and renal), and hemorrhages/ petechiae in other organs including urinary bladder, lungs, heart, stomach, and intestines.

1.2.3 Subacute: Caused by moderately virulent strains. Clinical signs are similar to the acute form but are less severe. The duration of illness is 5-30 days and mortality rates are lower (30-70 percent). Death occurs 15-45 days after infection. Like clinical signs, post-mortem lesions are similar to those seen with the acute form, but typically less severe.

1.2.4 Chronic: Caused by low virulence strains. Clinical signs develop over 2-15 months, are variable, and may include weight loss, fever, respiratory signs, skin necrosis, pericarditis, lung adhesions, and joint swelling. Mortality rates are low. Post-mortem lesions can include emaciation and focal caseous necrosis and mineralization of the lungs.

2. Laboratory Criteria

2.1 Agent Isolation and Identification: Collect whole blood (EDTA and heparin), spleen, lymph nodes, and tonsils. Keep samples as cold as possible without freezing. Tests

¹ In the 2018 ASF outbreaks in both China and Russia, the disease presented in the acute form.



include real-time polymerase chain reaction (qPCR), immunohistochemistry (IHC), and virus isolation (VI).

2.2 Agent Characterization: Genome sequencing is critical to differentiate viral strains.

2.3 Serology: Antibody (Ab) detection in serum is evaluated by enzyme-linked immunosorbent assay (Ab ELISA), indirect fluorescent antibody (IFA), and immunoperoxidase test (IPT). Antibodies develop 7-10 days post-infection and can persist for life. Pigs infected with highly virulent ASFV strains can die before antibody production occurs.

3. Case Definition and Reporting Criteria

3.1 Suspect Case:

3.1.1 an animal having clinical signs consistent with ASF; **OR**

3.1.2 an epidemiologic link to ASFV

3.2 Presumptive Positive Case: a suspect case with a non-negative screening laboratory test result for ASFV (PCR, Ab ELISA)

3.3 Confirmed Positive Case:

3.3.1 an animal from which ASF virus has been isolated; **OR**

3.3.2 otherwise identified by at least two different tests²

3.3.2.1 one antigen **AND** one antibody assay, especially in the case of subacute or chronic cases; **OR**

3.3.2.2 two antigen assays

² Under unique conditions, animal health officials may consider multiple non-negative ELISAs supported by positive IPTs as confirmed positive cases.