

- Lymph nodes—hemorrhages may be minute and diffused, or entire nodes may resemble blood clots;
- Kidney—hemorrhage ranges from pinpoint to entire organ; and
- Spleen—may be enlarged up to twice its normal size.

Excessive fluid may be present in body cavities and joints. Occasionally, death is sudden and no obvious lesions are found.

Hogs dying from the milder, chronic strains may also have secondary infections, which complicate the clinical and postmortem picture.

As milder forms emerge, it is becoming more difficult to distinguish between ASF and other swine diseases at necropsy.

How Does ASF Spread?

ASF spreads rapidly in both acute and chronic forms. Infected pigs are a primary source of the disease. During the acute disease, the ASF virus exists in all excretions and secretions of an infected pig and can survive outside of its host for long periods. Meat from infected pigs can harbor the virus up to 150 days.

In Africa, wild pigs are carriers of the ASF virus. Although they show no clinical signs of illness, infected warhogs and wild bush pigs can transmit the disease to domestic swine.

ASF can be spread by:

- Contact between infected and healthy pigs;
- Carrier animals;
- Contaminated garbage, feed, or water;
- Infected ticks (*Ornithodoros* spp.);
- Contaminated premises, clothing, footwear, or equipment;
- Contaminated vehicles; or
- Improper disposal of infected carcasses.

Certain *Ornithodoros* ticks can be natural hosts of ASF and are capable of transmitting the virus from one generation to the next. Thus, ticks on farms with ASF-infected pigs may carry the virus for longer than 6 months and could infect reintroduced swine. The virus is highly resistant to some chemical disinfectants but is quite sensitive to temperatures greater than 97.5 °F (37 °C).

Many outbreaks have been traced directly to uncooked garbage fed to hogs.

What Are the U.S. Prevention Measures?

To prevent the introduction of ASF into the United States, the U.S. Department of Agriculture (USDA) prohibits the importation of live hogs and uncooked pork from any country where ASF exists. Pork products from those countries can enter the United States under two conditions: (1) the product must be commercially canned, hermetically sealed, and fully sterilized so it remains shelf stable without refrigeration; and (2) the processes used have been proven to inactivate the virus. Strict quarantine and inspection practices are required at U.S. ports-of-entry.

Recognizing the threat that ASF constitutes for the United States and the rest of the Western Hemisphere, USDA's Animal and Plant Health Inspection Service (APHIS) has worked with countries that have suffered outbreaks. When an ASF outbreak occurred in the Dominican Republic in 1978, APHIS supported the country's eradication and repopulation program. By September 1980, all domestic pigs had been slaughtered. APHIS was also actively involved in the eradication and repopulation project in Haiti after the ASF outbreak there in 1979.

What Can You Do?

You can support U.S. efforts against ASF by

- Establishing good biosecurity practices on your farm;
- Watching your herds and being alert to abnormal conditions and reporting them to your veterinarian;
- Isolating hogs showing signs of disease and not moving them from your premises;



Practicing good biosecurity by disinfecting clothing, footwear, equipment, and vehicles will help prevent the spread of ASF. (APHIS photo by R. Anson Eaglin.)

- Restricting movement of all livestock on your premises if you suspect an outbreak; and
- Restricting movement of persons, vehicles, and equipment to and from your premises until you are notified of the diagnosis.

Report Suspicious Cases

Veterinarians and livestock owners who suspect an animal may have ASF or any other foreign animal disease should immediately contact State or Federal animal health officials.

For more information, contact
USDA, APHIS, Veterinary Services
Emergency Management
4700 River Road, Unit 41
Riverdale, MD 20737-1231
Telephone (301) 734-8073
Fax (301) 734-7817

Current information on animal diseases and suspected outbreaks is also available on the Internet. To reach the APHIS home page, point your Web browser to <http://www.aphis.usda.gov> and select the "Hot Issues" button for outbreak information.

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Animal and Plant Health Inspection Service
Program Aid 1614

African Swine Fever:

A Foreign Threat to U.S. Hogs



What Is African Swine Fever?

African swine fever (ASF) is one of the most destructive diseases of pigs worldwide. ASF is a contagious, often fatal viral disease of swine. The acute forms are characterized by high fever, reddening of the skin, pronounced hemorrhages in lymph nodes and internal organs, and, occasionally, enlargement of the spleen. The disease does not affect people or animals outside the pig family. Ticks often carry the virus that causes ASF from infected swine to healthy animals.

Since the 1960s, subacute and chronic forms of ASF as well as mild or inapparent infections have been increasingly reported. Because of their low mortality rates, these forms of ASF make it difficult to recognize, especially in a country where the disease has entered for the first time and farmers and veterinarians have had no previous experience with it.

Several other swine diseases have clinical signs and gross lesions similar to those caused by ASF. Classical swine fever (hog cholera), salmonellosis, and ASF are virtually impossible to distinguish from one another in the field. Laboratory confirmation is required to tell these diseases apart.

Unfortunately, no effective vaccine or treatment exists for ASF. The drastic measure of depopulation of affected and exposed swine must be applied to control or eradicate it in most situations.



African swine fever is a highly fatal disease that can kill almost all pigs that become infected.

Where Does ASF Occur?

ASF has existed for many years in Africa as an inapparent infection in warthogs, bush pigs, and giant forest hogs. It was recognized as a disease when it was contracted by domestic pigs of European origin in Kenya in 1909. ASF is also a very important clinical disease of domestic pigs in sub-Saharan Africa.

The global threat of ASF became apparent when it appeared in Portugal in 1957. This first incursion was eradicated in 1958 after 6,103 pigs died of the disease and 10,354 more were slaughtered. Outbreaks occurring along the Spanish border in France in 1964, 1967, and 1974 were eradicated by slaughtering infected and exposed animals. Since the mid-1960s, outbreaks have occurred in Italy, Spain, Malta, Sardinia, Belgium, and the Netherlands. Except for Sardinia, Europe is free of ASF today.

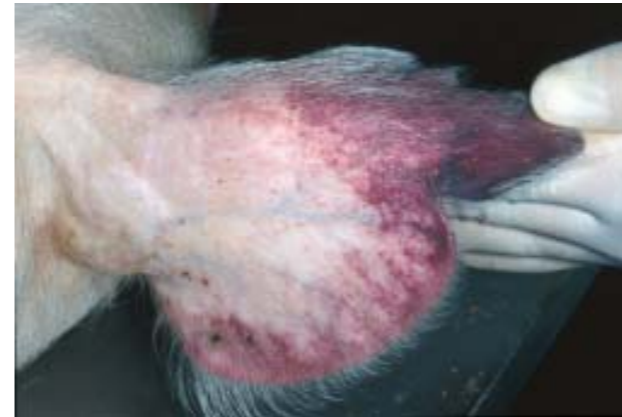
In the Western Hemisphere, ASF first appeared in Cuba in 1971. The disease was eradicated but only after more than 400,000 pigs died or were slaughtered. In the late 1970s, ASF entered Brazil, the Dominican Republic, Haiti, and, again, Cuba. The disease was eradicated from the Western Hemisphere by depopulation.

What Are the Clinical Signs of ASF?

The incubation period for ASF is 5 to 15 days. The highly virulent form of the disease can kill pigs before they show any apparent clinical signs of illness. Reduced appetite is often the first sign of ASF, and some pigs have a high fever. But most often, dead pigs are the first indication of the disease seen by producers. Hogs that recover from ASF can still transmit the virus for a long time.

An infected pig experiences a sharp rise in temperature, from normal 101 °F (38.3 °C) to 105 °F (40.6 °C) or higher. An animal's skin may appear reddened as a result of fever.

Pigs suffering from acute ASF die anywhere from 6 to 20 days after the onset of the fever. The temperature in stricken pigs usually falls quickly a day or two before death.



Reddening of the ears is a typical sign of ASF.



Pigs infected with ASF often experience bloody diarrhea. (APHIS photo by Karen Apicelli.)

Fifty percent or more of a herd affected with the subacute form of ASF may survive the acute phase of the disease. However, survivors will carry the virus for months.

Infected animals may exhibit some or all of the following clinical signs:

- Abortions;
- Tendency to lie down;
- Depression;
- Discoloration—blotchy or diffuse redness—on ears, snout, tail, legs, abdomen, and flanks;
- Labored breathing;
- Coughing;
- Bloody diarrhea; and the
- Tendency to bleed excessively.

What Are the Postmortem Signs?

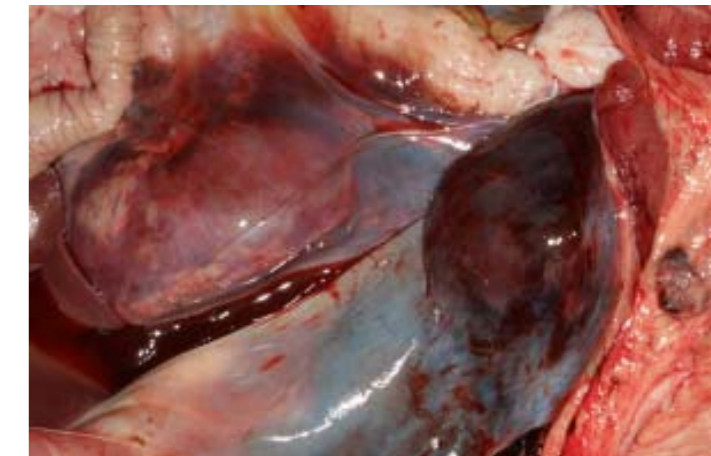
ASF produces lesions similar to those caused by classical swine fever, salmonellosis, erysipelas, and various toxins. Edema (swelling), ascites (fluid in the abdominal cavity), enlarged spleen, and hemorrhage are the most frequently observed signs.

Hemorrhages, varying from small pinpoint spots of blood in tissues to massive amounts of free blood, can be found in almost any organ of the body. The organs affected most often are

- Skin—reddening on ears, snout, abdomen, and hindquarters;
- Lungs—hemorrhages plus edema and pneumonia;



At necropsy, ASF-infected pigs often display an enlarged spleen. (APHIS photo by Karen Apicelli.)



The swelling around the kidneys and the muscle hemorrhages shown here are typical of pigs with ASF. (APHIS photo by Karen Apicelli.)