

GUIDELINES FOR CLASSIFICATION OF PHASES AND TYPES OF AN AFRICAN SWINE FEVER OUTBREAK AND RESPONSE

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The following guidelines are being developed as an aid for rapid decision making to facilitate response planning and development of business continuity plans in the event of an African swine fever (ASF) outbreak in the United States.

INTRODUCTION

Having pre-defined phases and potential types of an ASF outbreak will facilitate development of adaptable emergency response and business continuity plans for the swine industry in the United States. The phase is a temporal stage in an ASF outbreak response, the type is a categorical measure based on the virulence of the ASF virus involved in the outbreak and the potential magnitude of the outbreak. The phase and type of the ASF outbreak is expected to change over time and could be designated by the authorities responsible for managing the response. Different regions of the United States or segments of the swine industry may be designated as being involved in different phases or types of an ASF outbreak simultaneously.

Goals for Response to an ASF Outbreak:

- Take all measures possible to prevent disease spread and eliminate ASF from the US as quickly as possible. This will require a very aggressive stop movement, tracing, and stamping-out program and potentially the need to eliminate feral swine in an area
- Prevent ASF from becoming established in feral swine
- Conduct surveillance to rapidly re-establish United States freedom from ASF, including tick surveillance to look for introduction of the pathogen into the potential vector populations.

The internationally accepted standards for regaining ASF-free status are found in the World Organization for Animal Health (OIE) Terrestrial Animal Health Code (TAHC) (2018) (<http://www.oie.int/international-standard-setting/terrestrial-code/access-online/>) (Chapter 15.1).

The phase and type designations below are guidelines and may be modified by the responsible authorities to best fit the specific outbreak. Descriptors defining different phases and types (for example, focal, moderate, regional, high virulence, low virulence) are intentionally left vague in a recognition that responsible authorities will need to make decisions based on available information regarding specific outbreak characteristics.

IMPORTANT FACTS TO CONSIDER IN PLANNING FOR THE RESPONSE TO AN ASF OUTBREAK IN THE UNITED STATES

African swine fever (ASF) is a serious viral disease of pigs which has long been endemic in Africa (http://www.cfsph.iastate.edu/Factsheets/pdfs/african_swine_fever.pdf). **ASF virus only infects swine (*Sus scrofa*) and closely related species. It does not infect other livestock and is not a human health or food safety concern.**

ASF virus is highly contagious (for swine, people are not affected) and can spread rapidly in pig populations. ASF virus can be transmitted by ticks, direct contact, fomites (including vehicles, feed, and equipment), or consumption of uncooked pork. Other bloodsucking insects such as mosquitoes and biting flies may also be able to transmit the virus mechanically. In *Ornithodoros spp.* soft ticks, transstadial, transovarial and sexual transmission occur. In Africa, ASF virus is thought to cycle between newborn warthogs and the soft ticks (*Ornithodoros moubata*) that live in their burrows. Individual ticks can apparently remain infected for life, and infected soft tick colonies can maintain this virus for years. The American *O. turicata*, *O. dugesi*, and *O. coriaceus* ticks are potential vectors of ASF virus. ASF virus is found in all tissues and body fluids. Very high levels are found in blood. Massive environmental contamination can result if blood is shed during necropsies or if pigs develop bloody diarrhea. There is evidence that some pigs may become carriers.

The ASF virus is highly resistant to environmental conditions. It can survive for a year and a half in blood stored at 4° C, 11 days in feces at room temperature, and at least a month in contaminated pig pens. The virus will also remain infectious for 150 days in boned meat stored at 4° C, 140 days in salted dried hams, and several years in frozen carcasses.

ASF virus isolates vary in virulence from highly pathogenic strains that cause near 100% mortality to low-virulence isolates that can be difficult to diagnose. An outbreak of high virulence ASF virus will likely be detected sooner and be easier to trace and stamp out. In the absence of an effective surveillance program, low virulence strains may become widespread before detected and will be more difficult to trace based on clinical signs alone.

There is no vaccine or treatment currently available for ASF and it is unlikely that an effective vaccine will become available to aid in the control of an outbreak. This increases the importance of rapid detection and aggressive measures to stamp out infected herds. Unlike foot and mouth disease and classical swine fever, for which effective vaccines exist, there is no potential to use vaccination to suppress an extensive outbreak of ASF before entering the final phase of disease eradication.

ASF-free trade status cannot be recovered after an outbreak unless surveillance proves that ASF is not present in any pigs, including both domestic and feral pigs, in the country or zone. There is a provision in the 2018 OIE TAHC (Article 15.1.3) to gain ASF free status for domestic and captive wild pigs if feral swine in the country are infected, but it is difficult to achieve. If ASF becomes established in feral swine and soft tick reservoirs, it will likely be necessary to implement zoning or compartmentalization to

partially regain export markets. ASF is a serious problem in many African countries. Disease outbreaks have also occurred in Asia, Europe, South America and the Caribbean, and the cost of eradication has been significant. During outbreaks in Malta and the Dominican Republic, the swine herds of those countries were completely depopulated. In Spain and Portugal, ASF became endemic in the 1960s and complete eradication took more than 30 years. Changes in production practices and increasing globalization have increased the risk of introducing ASF into North America.

OIE Terrestrial Animal Health Code 2018

Chapter 15.1.

African swine fever

Article 15.1.7.

Recommendations for importation from countries, zones or compartments free from ASF

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an international veterinary certificate attesting that:

1. the animals showed no clinical sign of ASF on the day of shipment;
2. the animals were kept in a country, zone or compartment free from ASF since birth or for at least the past three months;
3. if the animals are exported from a free zone or compartment within an infected country or infected zone, necessary precautions were taken to avoid contact with any source of ASFV until shipment.

Article 15.1.8.

Recommendations for importation from countries or zones not free from ASF

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an international veterinary certificate attesting that the animals:

1. showed no clinical sign of ASF on the day of shipment;
2. and either:
 - a. were kept since birth or for the past three months in a compartment free from ASF; or
 - b. were kept in a quarantine station, isolated for 30 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the quarantine station, with negative results.

PROPOSED PHASES AND TYPES OF ASF OUTBREAKS

HEIGHTENED ALERT PHASE: ASF OUTBREAK IN CANADA, MEXICO, OR THE CARIBBEAN BUT NOT THE UNITED STATES

ASF virus in Canada, Mexico or the Caribbean could threaten to spread to the United States (Especially if ASF Control Areas are near or cross over the United States border or epidemiologically-linked premises export swine or uncooked swine products to the United States).

- Discontinue all imports of susceptible animals and animal products from the affected country into the United States.
- Work collaboratively with the affected country (as appropriate to that country's response plan) to assist them to:
 - Establish Control Areas around Infected Premises and Contact Premises
 - Implement controlled stop movement of susceptible animals in the Control Area and restrict other movements (vehicles, animal products, etc.) as appropriate to that country's response plan
 - Initiate stamping-out of infected and contact herds
 - Enforce established biosecurity protocols within the Control Area
 - Conduct surveillance for ASF
- Advise State and Tribal authorities to ensure that their swine premises ID data is up to date and to be prepared for animal tracing.
- Activate Incident Management Teams, an Incident Coordination Group or logistics and communication support as needed. Be prepared to stand-up a Unified Incident Command.
- Implement an enhanced national ASF surveillance plan including feral swine.
- Enhance surveillance for ASF virus at slaughter plants and ports of entry in the United States.
- Conduct tracing and surveillance of swine imported from the ASF-affected country within the last two incubation periods (30 days, incubation period = 15 days) prior to the date of first infection of the index case.
- Initiate stop movement, quarantine and perhaps stamping-out of herds in the United States with epidemiological evidence of direct or indirect contact with infected herds.
- Enhance Customs and Border Patrol's level of alert and increase scrutiny of travelers and inspections seeking animal products brought into the USA from countries where ASF is present.

Steps to take upon the first case of ASF in the United States and to continue for the duration of the outbreak:

- Advise all swine operations (including markets, fairs, exhibitions, etc.) in the United States to implement ASF-specific biosecurity plans and continue until freedom from ASF is re-established.
- Emphasize, and enhance enforcement of requirements for garbage feeding of swine in the United States.
- Allow movement of non-susceptible animals and their products (including eggs and milk) from the Control Area (from premises with no swine) into commerce with enhanced truck and driver biosecurity for the duration of the outbreak.

PHASE 1

The period of time from the confirmation of the first ASF case in the United States until there is reasonable evidence to estimate the extent of the outbreak. The transition to Phase 2 should be accomplished as soon as possible, with a goal of less than 4 days.

- Establish Control Areas around Infected Premises and Contact Premises.
- Stand-up and ramp-up a Unified Incident Command.
 - Logistics support may be required.
 - Activate a Joint Information Center; coordinate communication, including public hotlines and other resources.
- Stand-up Incident Coordination Group and Multiagency Coordination Group(s), if not previously established.
- Implement controlled stop movement of susceptible animals in the Control Area and restrict other movements in the Control Area (vehicles, etc.) as appropriate (as permitted by SPS plans, see Appendix D: Factors to Consider in Implementing Controlled Movement of Swine).
- Initiate quarantine and stamping-out of infected and contact herds
- Implement a validated, enhanced national ASF surveillance plan for the Control Area(s) and Free Area.
- Enforce biosecurity protocols within the Control Area(s).
- Work with USDA APHIS Wildlife Services and other appropriate Federal, State, and Tribal authorities to initiate the containment, testing, and then eradication of feral swine in the Control Area (if possible).
- States may activate livestock emergency response teams or notify to be on “standby”.

PHASE 2

Surveillance and epidemiology provides timely evidence of the extent of the outbreak and the virulence of the ASF virus strain to support planning and decision making by the Unified Incident Command, including Area Commands. Response strategy may depend on whether the ASF strain is of high virulence or low virulence and the extent of a low virulence outbreak.

Type 1 ASF Outbreak: Any Outbreak of High Virulence ASF virus or a Focal or Moderate Regional Outbreak with Low Virulence ASF virus

An outbreak of a high virulence strain of ASF virus which produces obvious clinical signs should be detected quickly and should be able to be traced efficiently based on clinical signs, supplemented with laboratory testing. Infected herds will develop severe disease and may have a high mortality rate. Implement aggressive stop movement and stamping-out of infected and contact herds, stamping out of feral swine populations in the Control Area and continue until ASF-free status is obtained.

An outbreak of a low virulence strain of ASF virus may be widespread before it is detected and will be difficult to trace based on clinical signs alone. The management of an outbreak with a low virulence strain may depend on the magnitude and location of the outbreak. An outbreak of low virulence ASF virus with one or a few focal areas of infection limited to a region with low to moderate swine numbers

on small to medium size premises should be aggressively stamped out. An extensive outbreak with low virulence ASF virus would be considered a Type 2 ASF outbreak (see below).

During a Type 1 ASF outbreak:

- Pre-emptively stamp-out herds with epidemiological evidence of direct or indirect contact with infected herds.
- Rapid depopulation of infected and contact premises with implementation of biosecurity, cleaning and disinfection, and carcass disposal (rendering or incineration, not burial or composting unless scavengers, rodents, etc. are strictly excluded).
- Only allow movement of pigs from the Control Area after an epidemiologic evaluation indicates no evidence of direct or indirect contact with infected swine (domestic or feral). Audited biosecurity (according to the SPS plan) must be in place on a premises for at least 30 days before animals from that premises can move from the Control Area. Pigs may be required to test negative for ASF virus and/or antibody before movement from the control area.
- Trace back and trace forward animal movements from Infected Premises for the previous two incubation periods (30 days).
- Work with entomologists to survey infected premises for presence of ASF virus soft tick vectors or their life cycle stages.
- Conduct intensive surveillance in the Control Area(s) and Surveillance Zone(s), including feral swine.
- Work with Wildlife Services, and appropriate Federal, State, and Tribal authorities to contain, test and then eradicate feral swine in the Control Area(s). Dispose of all feral swine carcasses in a biosecure manner.
- If feral swine are involved, institute tick control programs in the Control Area(s).
- If there is evidence of infected feral swine, depopulate all swine premises in the Control Area that do not have sufficient biosecurity to ensure that feral swine do not infect domestic swine.
- Swine production systems infected with ASF virus should develop a plan acceptable to the Unified Incident Command for controlled depopulation and repopulation of premises.

Type 2 ASF Outbreak: Large Regional or Widespread National Outbreak with Low Virulence ASF virus

Multiple areas of infection with low virulence ASF are detected in a region, or the type, number and/or size of infected and contact herds are too great to consider only a stamping-out strategy. It may be desirable to depopulate some premises by movement of healthy animals to slaughter.

- Implement all of the recommendations under a Type 1 ASF outbreak, with the exception that a modified stamping-out policy may be used.
 - Some Infected and Contact Premises may be depopulated by movement of healthy animals to slaughter; healthy animals that pass FSIS ante-mortem and post-mortem inspection can be slaughtered, their products treated to kill the ASF virus, and enter the food chain. A strategy of stamping-out young animals and slaughter of more mature animals may be pursued.
 - All Infected Premises should be de-populated by either stamping-out or slaughter (or a combination), cleaned and disinfected. Re-population with ASF virus-free sentinel animals may be recommended to ensure they are ASF negative before resuming normal business.

- Swine production systems infected with ASF virus should develop a plan acceptable to the Unified Incident Command for controlled depopulation and repopulation of premises.
- Officially identify all healthy animals sent to slaughter from infected herds.
- Healthy animals from an ASF virus-infected herd should be slaughtered with implementation of biosecurity during transportation and at a processing facility to avoid transmission of virus to negative herds.

PHASE 3

Surveillance and epidemiologic evidence indicates that the outbreak is under control and a plan is implemented to regain ASF virus-free status (OIE TAHC 2018 Article 15.1.6).

PHASE 4

The United States is declared free of ASF virus. The USDA continues to work to convince trading partners to accept United State exports of swine and pork products.

Please send comments and suggestions to:

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