

USDA APHIS
VETERINARY
SERVICES

Planning and Preparing for
African Swine
Fever



Quick Briefing



United States
Department of
Agriculture

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OVERVIEW OF AFRICAN SWINE FEVER (ASF)

1. WHAT IS ASF?

- ASF is a highly contagious hemorrhagic viral disease of swine.
 - There is only one recognized serotype of ASF virus (ASFV), p72; and there are over 20 identified genotypes of the major capsid protein p72.
 - There is no effective treatment for ASF-infected swine, nor is there a protective vaccine.
 - ASF is currently widespread and endemic in sub-Saharan Africa, parts of western Africa, and has spread through Asian countries, notably China, Eastern Europe and the Caucasus.
- ASFV can persistently infect domestic and wild pigs.
 - Natural reservoir hosts are warthogs and bushpigs, although infection is imperceptible.
 - Soft ticks belonging to the *Ornithodoros* genus are competent vectors and transmit the virus to other ticks or susceptible swine species.
- Clinical signs of ASF are similar to classical swine fever and require a differential laboratory diagnosis.
- ASF presents in four clinical disease forms (peracute, acute, subacute, and chronic) which are classified based on strain virulence, immune status, clinical signs, and gross lesions.
- Pigs with a highly virulent strain of ASFV typically experience fever, loss of appetite, depression, abnormal breathing, shivering, possible cough, unsteadiness when standing, spontaneous abortion in pregnant sows, blueish-purple extremities in white-skinned pigs, hemorrhages of the ears and abdomen.
- Morbidity is high in domestic pigs; mortality varies by disease form—young pigs, in particular, experience high death rates with the acute form of ASF.

2. IS ASF A THREAT TO PUBLIC HEALTH?

- ASF is not a threat to public health and *does not* infect humans.
- ASF is not a food safety concern—properly prepared meat is safe to eat.
- In a widespread ASF outbreak, the supply of swine protein available for consumers could be affected.

3. DOES THE UNITED STATES HAVE ASF?

- The United States is currently free of ASF.
- The United States, Canada, Australia, and New Zealand have never experienced an ASF outbreak.

4. WHERE IS ASF FOUND IN THE WORLD?

- ASF is currently widespread and endemic in sub-Saharan Africa and parts of western Africa.
- ASF is present in nearly one-fifth of countries in the world.

5. HAVE THERE BEEN RECENT ASF OUTBREAKS IN THE WORLD?

- In the last decade, ASF has spread through Eastern Europe and the Caucasus. Since 2018:
 - Ten European Union Member Countries had ASF outbreaks in domestic pigs.
 - Four other European countries had ASF outbreaks in domestic pigs.
 - Eleven 2018 European Union Member Countries had ASF outbreaks in wild boar.
 - Four other European countries had ASF outbreaks in wild boar.
 - Thirteen Asian countries had ASF outbreaks in domestic swine.

RELEVANCE OF ASF

6. WHO IS CONCERNED ABOUT ASF?

- ASF is a high priority for the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), and the U.S. Department of Homeland Security (DHS).
- ASF is of significant concern for State Animal Health Officials, swine producers, and many other stakeholders in animal agriculture.

7. WHY IS ASF SO CONCERNING?

- ASF is a contagious and lethal disease of swine species.

- As of March 1, 2020, the USDA National Agricultural Statistics Service identified an inventory of 77.6 million hogs and pigs in the United States.
 - Breeding inventory: 6.38 million head.
 - Market hog inventory: 71.3 million head.
 - Pig crop: 34.7 million head (December 2019 – February 2020 inventory records).
- An outbreak of ASF in the United States would have a substantial and devastating impact on the agricultural economy and consumers.
- ASF outbreaks in other countries have had a significantly negative impact on their economies.
- Research suggests epidemic outbreaks of ASF result in tremendous economic burden, depending on the duration of the outbreak, extent of trade embargoes, and reaction of consumers to the disease and response measures.

8. WHY IS ASF SO ECONOMICALLY DAMAGING?

- In an ASF outbreak of any size, there would be immediate disruptions to international exports of meat, meat products, and byproducts of swine.
- In a large, multistate ASF outbreak, international trade would be severely impacted, potentially for an extended period of time.
- There would also be losses from disruptions to interstate commerce and production.
 - Highly integrated animal agriculture relies on rapid and just-in-time movements.
 - Disruption (e.g., movement standstill orders) of animal and product movement could interrupt food supply chains in both the short- and long-term.
- The direct costs of controlling an outbreak would be high: indemnity payments could be large, and activities such as depopulation and humane euthanasia activities for animal welfare, carcass disposal, and disinfection are resource and personnel intensive.
- In addition to direct costs, there are numerous indirect costs and impacts, including unemployment and losses or disruptions in related industries (such as grain, other feed products, tourism, etc.).

9. WHAT DOES USDA APHIS PLAN TO DO IN AN ASF OUTBREAK?

- USDA APHIS will work to achieve its goals for an ASF response. These goals are to:
 - **Goal 1:** Detect, control, and contain ASF in swine as quickly as possible;
 - **Goal 2:** Eradicate ASF using strategies that seek to stabilize animal agriculture, the food supply, and the economy, protect public health and the environment; and
 - **Goal 3:** Provide science-and risk-based approaches and systems to facilitate continuity of business for non-infected animals and non-contaminated animal products.
- Achieving these goals will allow individual livestock facilities, States, Tribes, regions, and industries to resume normal production as quickly as possible.
- USDA APHIS, by achieving these goals, will help ensure the United States regains ASF-free status and reestablishes international trade without the response effort causing more disruption and damage than the outbreak itself.
- USDA will work with other Federal agencies, States, Tribes, and Territories to manage and control the outbreak in a unified approach alongside the owners, producers, industries, and communities affected.
- USDA—as part of a cohesive communications strategy—will assure consumers that USDA is responding quickly and decisively to eradicate the virus and that meat/meat products are safe to consume.

10. WHAT IS THE ASF RESPONSE STRATEGY?

- The United States' primary response strategy for ASF in swine is the establishment of quarantines and movement controls with eradication by stamping-out.
- ASF is only controlled and eradicated by depopulation (also known as stamping-out) infected animals.

- Stamping-out consists of depopulation of clinically affected swine and, as appropriate, swine that are directly exposed to the virus.
- Depopulation and disposal of pigs on Infected Premises must be conducted with biosecurity, to prevent further viral spread.

11. WHAT ARE CONTROL AREAS, CONTACT TRACING, AND NETWORK-BASED CONTROLS?

- APHIS acknowledges there will be significant challenges to eradicate ASF, depending on outbreak severity.
- An ASF outbreak may involve both domestic swine and/or feral pigs. Thus, movement control measures are critical, as ASF is readily spread by infected swine and contaminated fomites.
- Science- and risk-based movement controls are essential to ensure minimal business disruption and allocation of resources for response.
- Contact tracing and network-based controls (NBCs) will be emphasized in addition to Control Areas.
- Contact tracing and NBCs will target high-risk Contact Premises for immediate investigation and testing.
- Once infected premises are detected, contact tracing and Network-based controls will be employed to identify additional infection and reduce transmission through the application of movement controls to epidemiologically-linked Contact Premises.
- Upon ASF detection in domestic or feral swine, Control Areas will be established around Infected Premises and/or the location of infected feral pigs.
 - Control Areas, supported by quarantine and movement controls, are established to reduce the risk of susceptible swine from coming into contact with ASFV.
 - The size and number of Control Areas will vary based on infected population(s) (i.e., commercial, backyard, or feral), the epidemiological information available, and the risk of ASFV transmission through swine, fomites or vectors.

- A positive ASFV detection will minimally require a 5 kilometer Control Area; consisting of a 3 kilometer Incident Zone, 2 kilometer Buffer Zone, and a 5 kilometer Surveillance Zone in the Free Area.
- Epidemiological assessments must be completed in order to determine the extent of the outbreak.
 - This entails the identification and prioritization of epidemiologically-linked Contact Premises (also known as network premises), surveillance for contact, sick and dead feral swine.
 - Feral swine found near ASF infected domestic swine might be depopulated.
 - All domestic swine premises, infected or non-infected, should take additional biosecurity precaution to prevent contact between feral swine and domestic swine.
- Response strategies will be adjusted to best fit the outbreak situation.

12. WILL THE USDA DECLARE AN EXTRAORDINARY EMERGENCY TO CONTROL AN ASF OUTBREAK?

- A feral or domestic ASF outbreak will have immediate and serious negative interstate commerce and international trade impacts.
- USDA plans to issue a declaration of extraordinary emergency to enhance response readiness, provide appropriate resources, and effectively assist impacted States and Tribes.
- It is important to emphasize an effective response to an ASF outbreak in the United States, will require unity of effort and unity of purpose from States, Tribes, private sector and USDA.
- No single entity can conduct an ASF response alone, but we can effectively respond together.
- Depending on outbreak jurisdiction, response actions and authorities begin with the State or Tribe, with supporting USDA coordination, resources and authority.
- There is currently no effective vaccine available for ASFV in domestic swine.

13. WHAT IS THE NATIONAL MOVEMENT STANDSTILL?

- USDA plans on issuing a 72-hour National Movement Standstill for a detection of ASF in domestic swine and/or feral swine.
 - This movement standstill is only for live swine and swine germplasm – not for pork or pork products that have passed FSIS inspection.
 - All swine in transportation at the start of the movement standstill will continue to their destination or return to point of origin.
 - There will be a standardized start and stop time for the national standstill.
 - A National Movement Standstill will allow States, Tribes, and industry to gather critical information for a unified approach for an ASF response.
- Initial critical activities include communicating situation awareness, conducting high priority contact tracing, establishing Control Areas, and conducting critical national and international communications.
- USDA wants to emphasize the National Movement Standstill only applies to live swine or germplasm that are not in movement at the time of issuance.
- Upon confirmation of ASF in commercial swine, USDA will issue a National Movement Standstill for 72-hours via Federal Register Order, or other regulatory mechanism.
- The duration of a National Movement Standstill may vary depending on the epidemiological circumstances of the outbreak.
- In the event of a movement standstill, USDA will provide clear and concise policy guidance on the implementation and provisions.
 - Specific geographical area or boundary (e.g., Nationwide or other).
 - Specific requirement that all live swine in transit at issuance must reach a destination.
 - Specific time indicating the duration of a standstill (e.g., 72-hours).
 - Specific list of what items are restricted from movement (e.g., live swine and germplasm).
 - Specific list of what items are exempt from movement restrictions (e.g., negligible risk FSIS-inspected products).

14. IS THE UNITED STATES DOING ANYTHING TO KEEP ASF OUT OF THE COUNTRY?

- The United States implements many preventative measures to keep ASF away from its susceptible animal populations.
 - USDA APHIS works closely with U.S. Customs and Border Protection to enforce import restrictions and requirements; which help ensure ASF is not brought into the country through the legal trade of animals and animal products.
 - USDA APHIS conducts pathways analyses to minimize opportunities for ASF introduction.
- USDA APHIS educates the public on the risk of ASF through outreach measures and agreements with academia and States.

15. IF WE ARE DOING SO MUCH TO ENSURE ASF DOESN'T ENTER THE COUNTRY, WHY DO WE NEED TO PREPARE FOR AN ASF OUTBREAK?

- There is always the risk of an ASF introduction into the United States.
 - ASF is highly contagious and there is an increasing volume of international travel and trade.
 - Due to the volume of legal products entering the United States, it is impossible to search and inspect every shipment, piece of baggage, or person entering the country for illegal products.
 - There is an unknown quantity of illegal animals and animal products entering the United States that may contain ASFV.
 - It is also possible ASF may be introduced intentionally or accidentally.
 - In order to successfully execute an ASF response, we must prepare and plan ahead of time; this also helps USDA prepare to respond to other significant animal health incidents.

16. WHAT IS USDA APHIS DOING TO PREPARE FOR AN ASF OUTBREAK?

Investigations & Monitoring

- USDA APHIS trains veterinarians to recognize ASF in domestic swine.
- USDA APHIS, in coordination with State Animal Health Officials, actively investigates suspected U.S. cases of vesicular lesions and Classical Swine Fever.
- USDA APHIS coordinates with the National Animal Health Laboratory Network (NAHLN) so that NAHLN laboratories can run preliminary diagnostic testing during an investigation of vesicular lesions.
- USDA APHIS also monitors disease outbreaks occurring around the world for situational awareness.

Capability Development

- The National Veterinary Services Laboratories (NVSL) develops and improves diagnostic tests to improve early detection and overall diagnostic capabilities; NVSL also coordinates with USDA's Agriculture Research Service to update science and information related to diagnostics.
- NVSL supports NAHLN laboratories—the NVSL Foreign Animal Disease Diagnostic Laboratory—serves as the U.S. reference laboratory to confirm ASF in the United States.
- There are approximately 40 State, university, and Federal laboratories within the NAHLN that conduct diagnostic testing for African Swine Fever investigations.
- The National Veterinary Stockpile (NVS) has contracts in place to provide veterinary countermeasures, supplies, and equipment—to States, Tribes, or Territories in a disease outbreak.
- During a large-scale animal agriculture incident, USDA can leverage additional personnel to provide the necessary surge support to States; this includes the Voluntary Emergency Ready Response Corps, which draws responders from the entire USDA APHIS agency.

- The USDA APHIS National Veterinary Accreditation Program provides USDA accredited veterinarians with supplemental training on foreign animal, vesicular, and exotic avian diseases, as well as on critical response activities and emergency management.

Response Planning

- USDA APHIS produces a public *ASF Response Plan: The Red Book* which provides a clear strategic framework for ASF response.
- USDA APHIS updates ASF response policy with regard to response strategies to include network-based controls and stamping-out strategies.
- USDA APHIS provides multiple documents to help all responders prepare for an ASF outbreak, from investigating a potential case to executing a response effort.
- USDA APHIS engages in public-private-academic partnerships to develop the Secure Food Supply Plans, which help to facilitate continuity of business in an ASF outbreak: these plans use science- and risk-based approaches to mitigate disruptions for producers, haulers, and processors in the event of an outbreak.
- USDA APHIS develops, utilizes, and improves models and other analytical tools that can help inform decision-making prior to and during outbreak situations.

Engagement

- USDA APHIS conducts training and exercises with States and private sector for ASF preparedness, including the 2019 SFEAR ASF exercise.
- USDA APHIS conducts stakeholder meetings to discuss and formulate ASF preparedness and response policies.
- USDA APHIS coordinates with other government agencies to identify resources, develop processes and agreements, and foster partnerships to support coordinated response efforts across government.
- USDA APHIS also works with public and private researchers to discuss and improve current ASFV diagnostic tests and vaccine capabilities.
- USDA APHIS routinely engages with bilateral and multilateral trading partners on issues of international commerce.

- USDA APHIS engages with international partners, including the World Organization for Animal Health [OIE] to harmonize test capabilities, collaborate on issues of capacity building, and discuss standards for trade and ASF freedom—particularly reducing the time to freedom when response strategies are implemented.

Exercises

- USDA APHIS Veterinary Services has a National Training and Exercise Program to build preparedness within VS.
- USDA APHIS conducts exercises to test Incident Command System procedures and processes for an ASF outbreak.
- The National Veterinary Stockpile carries out exercises practicing the staging of depopulation and disposal support from contractors, should these capabilities be required in an outbreak.
- NAHLN conducts tabletop exercises to test laboratory response procedures and processes.

17. WHAT ARE USDA’S FUTURE OBJECTIVES, AS RELATED TO IMPROVING ASF PREPAREDNESS IN THE UNITED STATES?

- USDA APHIS will continue working with stakeholders to define expectations and preparedness goals for an ASF outbreak. In doing so, USDA APHIS:
 - Understands requirements and best practices may change by region and/or affected animal populations;
 - Is cognizant of the challenges of mass depopulation and disposal as a response strategy;
- USDA APHIS will continue to engage stakeholders so that there is increasing interest and participation in ASF preparedness.
- USDA APHIS will continue to work to improve and expand communication to external and internal stakeholders regarding the capabilities required to effectively execute ASF response strategies.
- USDA APHIS will continue to participate in exercises and update response plans, procedures, and processes with lessons learned.

- USDA APHIS will continue to collaborate to improve diagnostic capabilities and veterinary countermeasures.

PLANS & FURTHER INFORMATION

18. WHAT PLANS AND PROCEDURES ARE CURRENTLY AVAILABLE FROM USDA APHIS FOR ASFV?

- *APHIS Foreign Animal Disease Framework (Manual 1-0): Roles and Coordination*
- *APHIS Foreign Animal Disease Framework (Manual 2-0): Response Strategies*
- *APHIS Foreign Animal Disease Investigation Manual (Manual 4-0)*
- *ASF Response Plan: The Red Book*
- *FAD PReP Standard Operating Procedures (including Etiology and Ecology and Surveillance, Epidemiology, and Tracing, among others)*
- *ASF Ready Reference Guides*

19. WHERE CAN I GET MORE INFORMATION?

- For more information on ASF and foreign animal disease (FAD) preparedness, and documents previously referenced, please go to:
 - FAD PReP Materials: www.aphis.usda.gov/fadprep
 - APHIS Animal Health Emergency Management: https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergency-management/ct_emergency_management_home.
- For more information on USDA APHIS Veterinary Services, please go to:
 - APHIS Veterinary Services Animal Health: <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth>
 - Approved NAHLN Laboratories: https://www.aphis.usda.gov/animal_health/nahln/downloads/asf_lab_list.pdf.
- For more information on the public-private-academic collaborations, please go to:
 - Secure Pork Supply: www.securepork.org