

# Foot and mouth disease, African swine fever, and Classical swine fever

*Foreign Animal Diseases (FADs) addressed  
in the Secure Pork Supply Plan*



## Today's Discussion

- Overview of Foreign Animal Diseases (FADs) in the SPS Plan
  - Foot and mouth disease (FMD)
  - African swine fever (ASF)
  - Classical swine fever (CSF)
- Transmission of these diseases
- Disease monitoring (Surveillance) concerns



# Foot and Mouth Disease



## Foot and Mouth Disease (FMD)

- Affects animals with cloven-hooves
- Most contagious livestock disease
- No treatment



NOT a public health or food safety concern



Cattle



Pigs



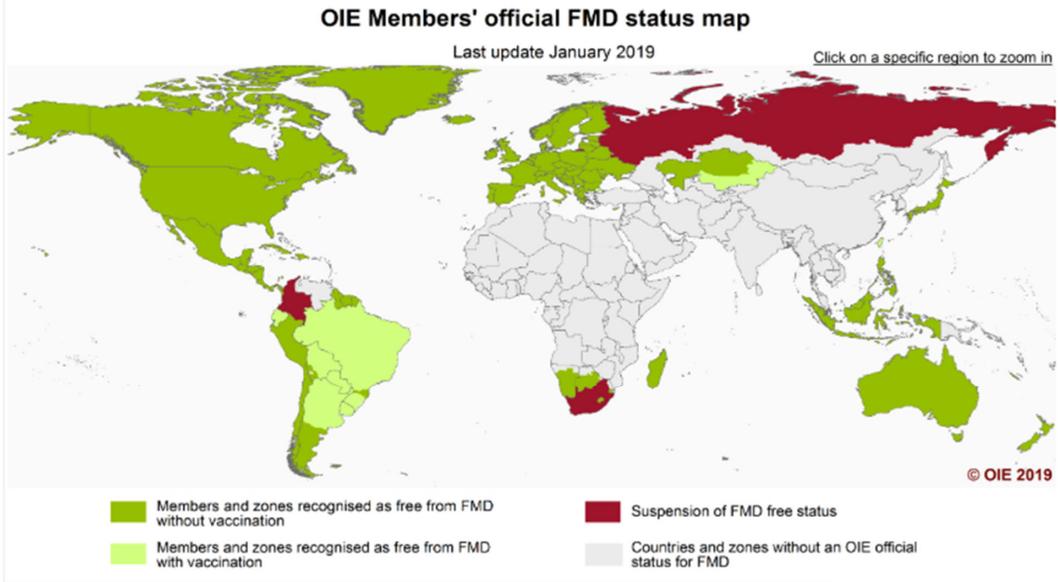
Sheep



Goats



# FMD Around the World



Source: OIE Member Countries' official FMD status map

# FMD Around the World

UK '01, '07



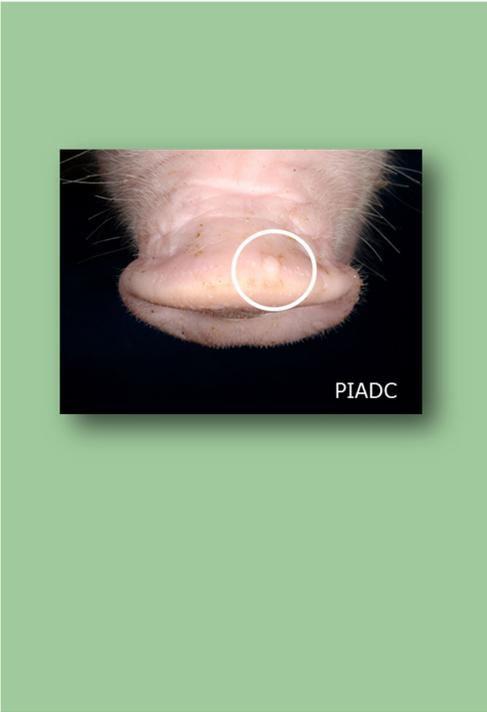
Korea '10



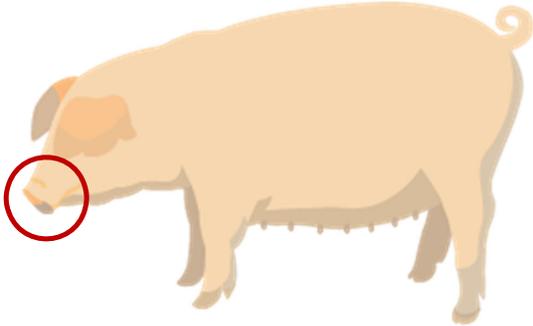
Japan '10



# Signs of Foot and Mouth Disease



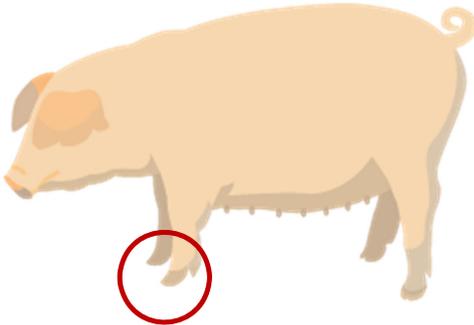
## Snout



# Signs of Foot and Mouth Disease



## Feet



# African Swine Fever

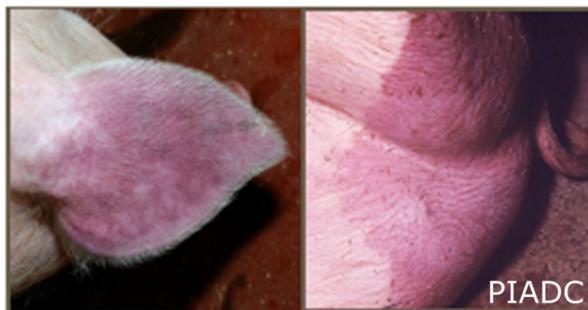


## African Swine Fever (ASF)

- Affects domestic and feral pigs
- No treatment or vaccine



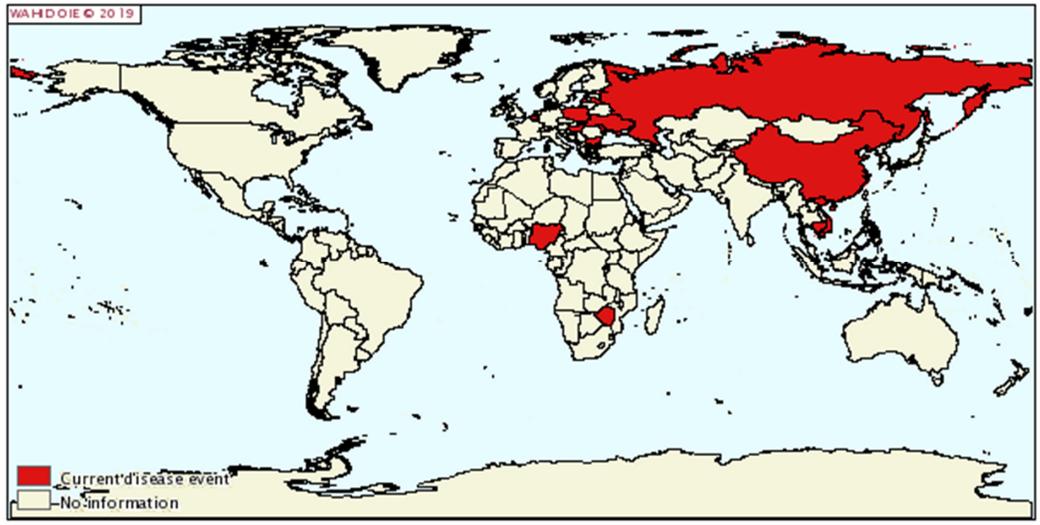
Pigs



NOT a public health or food safety concern



# ASF Around the World



Source: OIE Member Countries' official ASF status map



# Could ASF Occur in the U.S.?



Meat

People



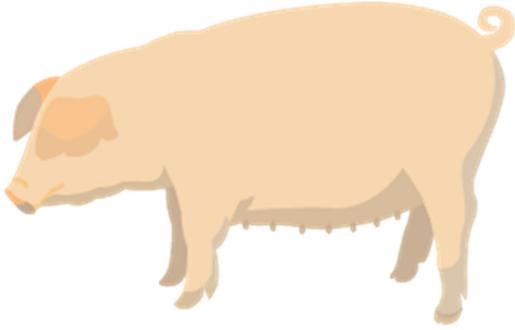
Production Inputs



# Signs of African Swine Fever



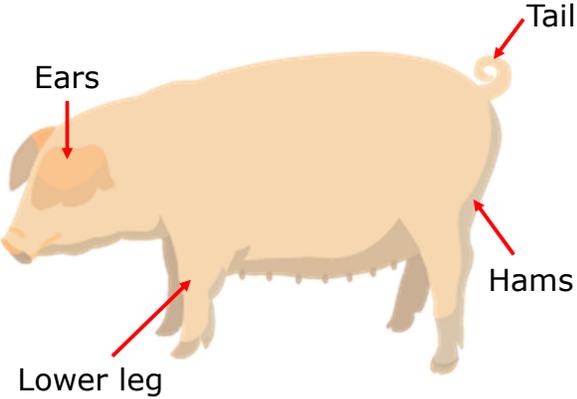
## Overall



# Signs of African Swine Fever



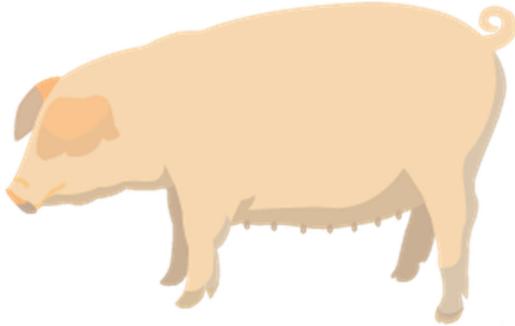
## Skin



# Signs of African Swine Fever



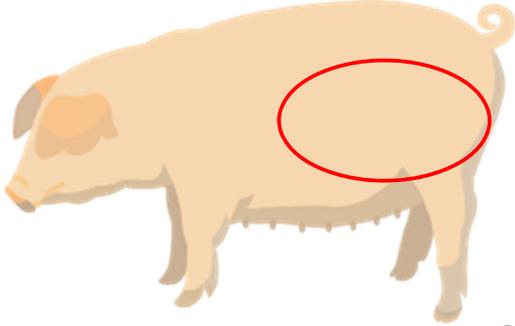
Digestive Tract



# Signs of African Swine Fever



Reproductive



# Signs of African Swine Fever

Sudden Death



# Signs of African Swine Fever



Photo credit: Prof. Zygmunt Pejsak



# Classical Swine Fever



## Classical Swine Fever (CSF)

- Affects domestic and feral pigs
- No treatment



Pigs



NOT a public health or food safety concern

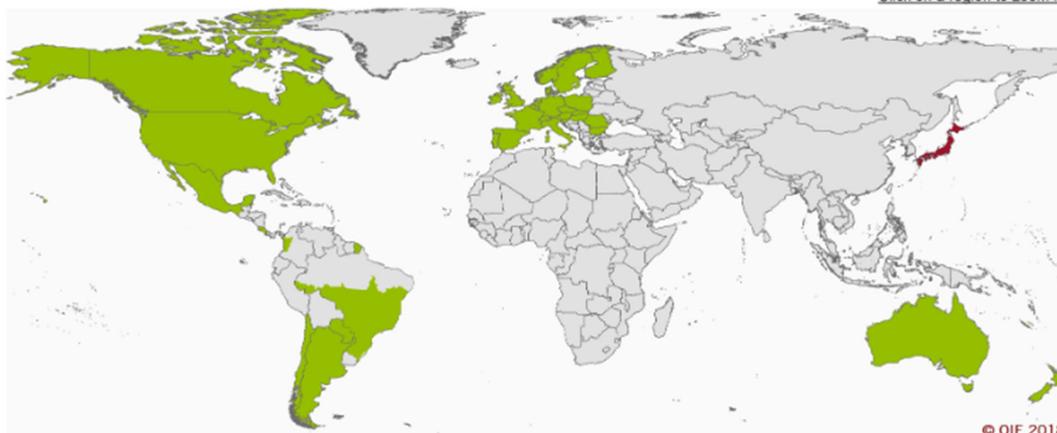


# CSF Around the World

OIE Members' official CSF status map

Last update September 2018

[Click on a region to zoom in](#)



- Members and zones recognised as free from CSF
- Suspension of CSF free status
- Countries and zones without an OIE official status for CSF



Source: OIE Member Countries' official CSF status map

# Could CSF Occur in the U.S.?



Meat

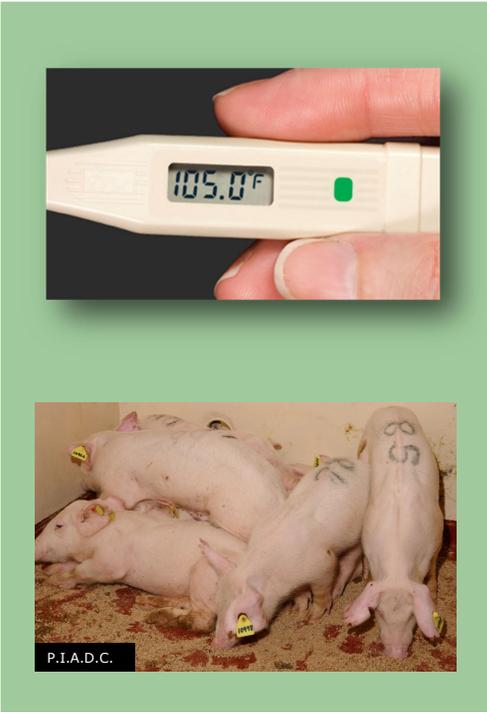
People



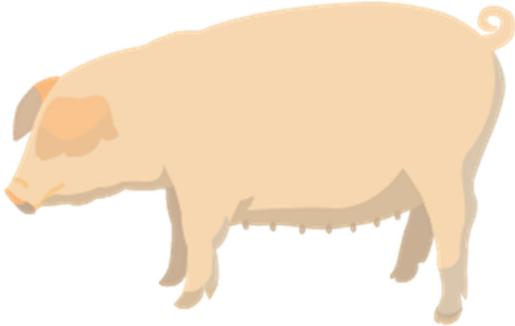
Production Inputs



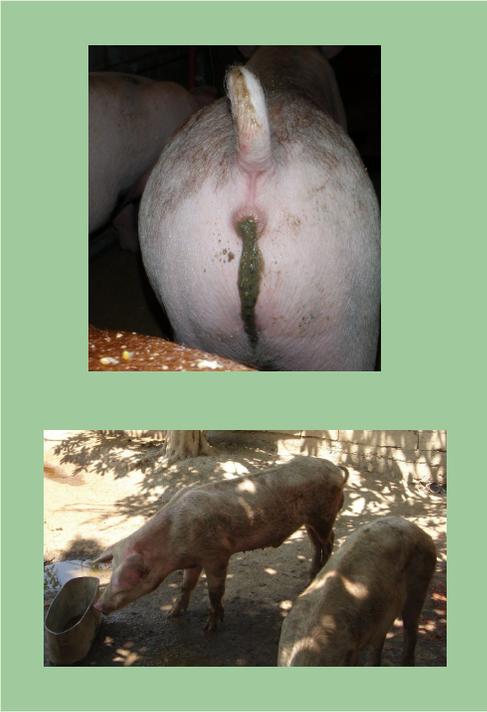
# Signs of Classical Swine Fever



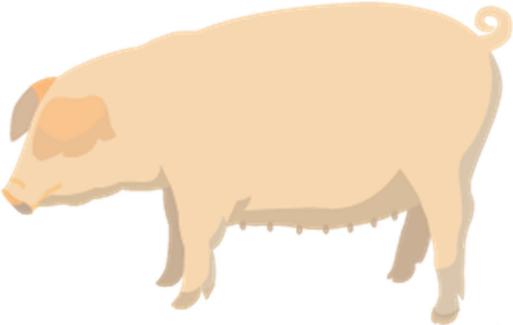
Overall



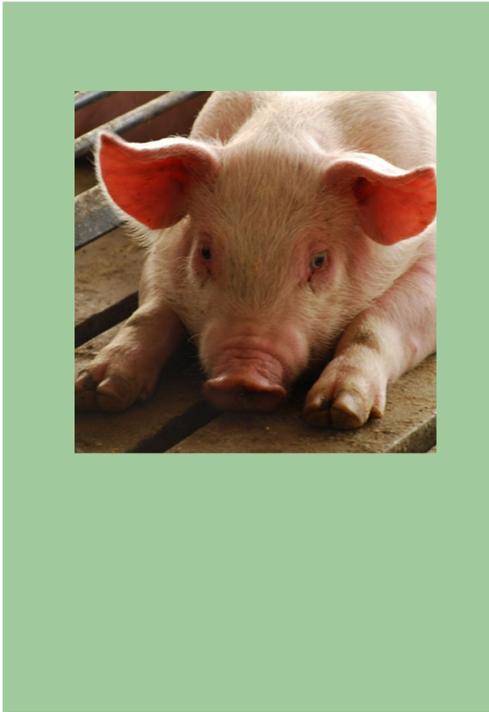
# Signs of Classical Swine Fever



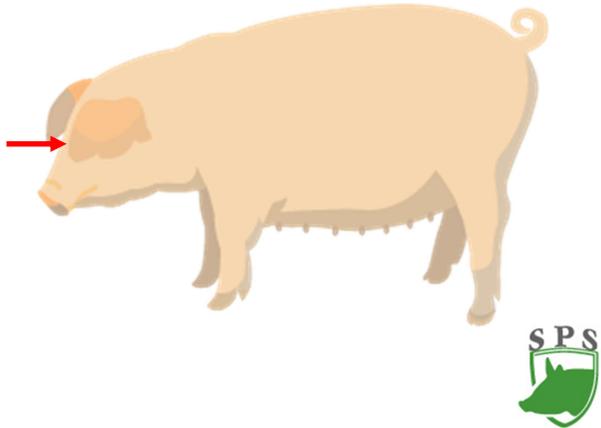
Digestive Tract



# Signs of Classical Swine Fever



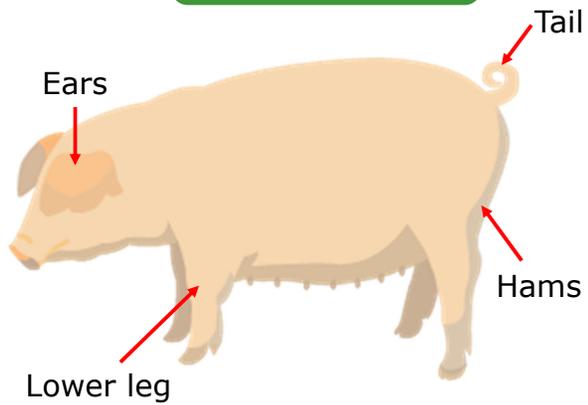
Eyes



# Signs of Classical Swine Fever



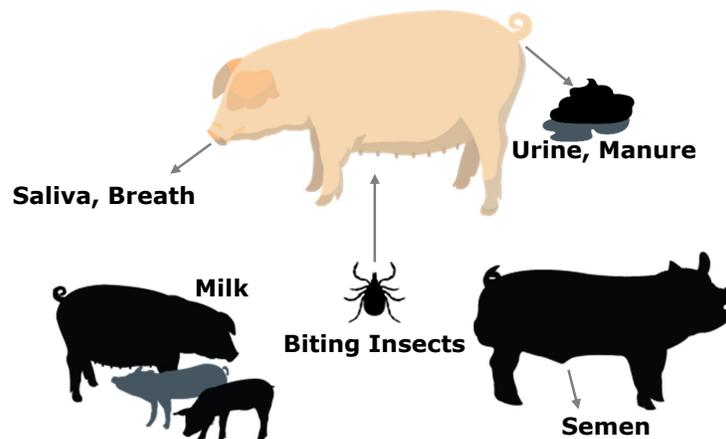
Skin



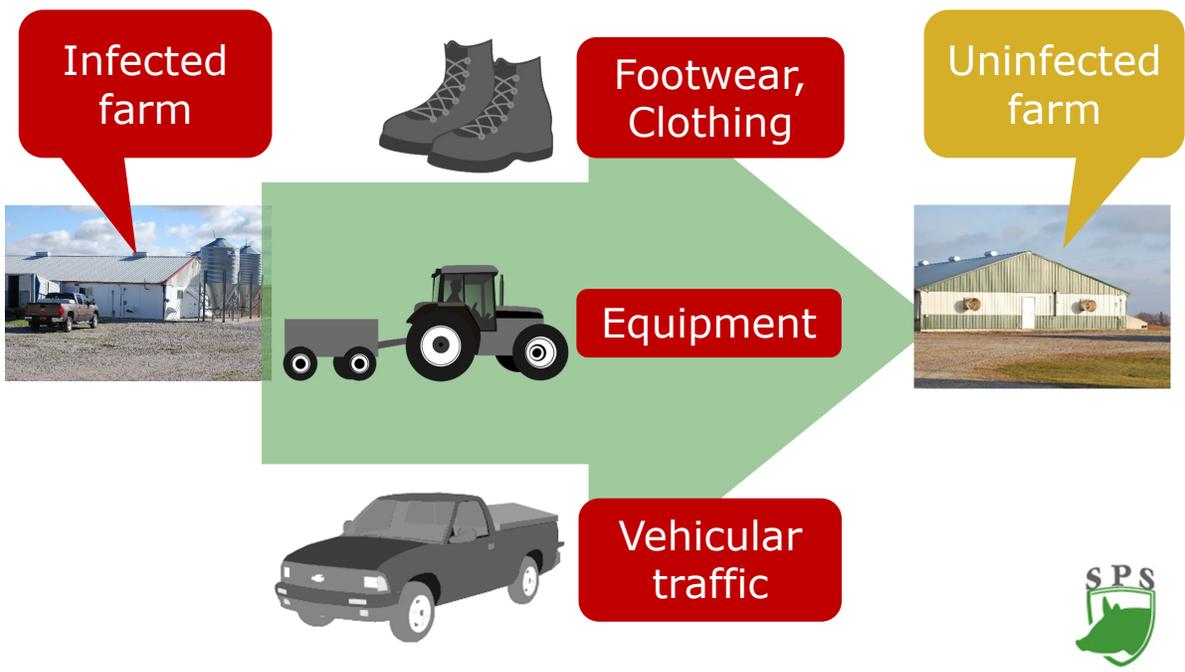
# FMD, ASF, and CSF Transmission



## Spread of FMD, ASF, or CSF Virus



# FADs can be Carried on Equipment



# ASF Transmission Concerns

Uncooked/undercooked garbage or plate waste



# ASF Survival Concerns



Slide credit: Dr. Scott Dee

ASFV survival in batch 4 samples (30 DPI).

Ingredient	SVA (FMDV)	ASFV	PSV (SVDV)	PEDV	FCV (VESV)	PCV2	BHV-1 (PRV)	PRRSV 174	BVDV (CSFV)	VSV	CDV (NiV)	IAV-S
Soybean meal-Conventional	(+)	(+)	(+)	(+)	(+)	(-)	(+)	(+)	(-)	(-)	(-)	(-)
Soybean meal-Organic	(+)	(+)	(+)	(+)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Soy oil cake	(+)	(+)	(+)	NT	(-)	(-)	(+)	(-)	(-)	(-)	(-)	(-)
DDGS	(+)	(-)	(-)	NT	(-)	(-)	(-)	(+)	(-)	(-)	(-)	(-)
Lysine	(+)	(-)	(+)	(+)	(+)	(+)	(-)	(-)	(-)	(-)	(-)	(-)
Choline	(+)	(+)	(-)	(+)	(-)	(+)	(-)	(-)	(-)	(-)	(-)	(-)
Vitamin D	(+)	(-)	(+)	(+)	(-)	(+)	(-)	(-)	(-)	(-)	(-)	(-)
Moist cat food	(+)	(+)	(+)	NT	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Moist dog food	(+)	(+)	(+)	NT	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Dry dog food	(+)	(+)	(+)	NT	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Pork sausage casings	(+)	(+)	(+)	NT	(+)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Complete feed (+ control)	(+)	(+)	(+)	NT	(+)	(+)	(-)	(-)	(-)	(-)	(-)	(-)
Complete feed (- control)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)
Stock virus control	(-)	(+)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)

# Disease Monitoring (Surveillance) Concerns



## Shedding of FMD virus



Normal appearing animals can spread the disease

Shed the virus 2 to 4 days *before* clinical signs appear



Biosecurity is critical



# ASF and CSF may resemble other swine diseases

- Porcine dermatitis and nephropathy syndrome (PDNS)
- Postweaning multisystemic wasting syndrome (PMWS)
- Porcine reproductive and respiratory syndrome (PRRS)
- Aujeszky’s Disease (PRV)
- Erysipelas
- Salmonellosis
- Pasteurellosis
- Actinobacillosis
- *Haemophilus suis*



# Disease Monitoring for FADs

The screenshot shows an 'Emergency Action Plan' form from POA PLUS and SPS. The form includes sections for Site Information, Contacts, Disease Control, and Manure Spills. A small image of a pig is at the top left, and a larger image of a diseased piglet is at the bottom left.

Section	Item	Contact/Details
Site Information	Site Name	Premises ID Number (PIN)
	Owner/Operator Name	Phone
	Unit Address (including Emergency 9-1-1 address)	
Contacts	Rescue/Ambulance	Fire Department
	Poison Control	Doctor
	Police/Sheriff	Insurance
	Hospital	Other
Disease Control	State Animal Health Official	Federal Animal Health Official
	Veterinarian	Other
	State EPA	Earth Moving
Manure Spills	Manure Pumping	Placing
	Equipment	County Engineer

Emergency Action Plan

Diagnostic Testing



# FMD, ASF, CSF Resources

**SPS SECURE PORK SUPPLY**

SPS PLAN | PORK PRODUCERS | VETERINARIANS | PACKERS | REGULATORY OFFICIALS | **TRAINING MATERIALS**

**Training Materials**

**Disease Monitoring:**  
 Disease Monitoring  
 Disease Monitoring

**Disease Monitoring: Observing Pigs**

Disease monitoring involves close observation and testing. Producers are encouraged to designate one or more Swine Health Monitors.

The materials below will help Swine Health Monitors find disease early or demonstrate no evidence of infection so a movement permit can be requested in an outbreak. Remember to document all training (visit [Forms page](#)).

**Swine Health Monitor Training**

**Foot and mouth disease videos**

- FMD Video (English) - [Watch \(6:51 mins\)](#) | [Download \(7mb\)](#)
- FMD Video (Spanish) - [Watch \(8:15 mins\)](#) | [Download \(42mb\)](#)

**African swine fever videos**

- ASF Video (English) - [Watch \(6:22 mins\)](#) | [Download \(6mb\)](#)
- ASF Video (Spanish) - [Watch \(8:03 mins\)](#) | [Download \(32mb\)](#)

**Posters**

Download and print the 11" by 17" FMD, CSF, and ASF posters.

- Foot and mouth disease poster [English](#) | [Spanish](#)
- Classical swine fever poster [English](#) | [Spanish](#)
- African swine fever poster [English](#) | [Spanish](#)

**Pocket Guide**

Foot and mouth disease pocket guide [English](#) | [Spanish](#)

**Swine Health Monitors...**  
 people who possibly look at the pigs and can recognize when something is "off"

**Order Free 11" by 17" Laminated FMD, CSF, and ASF Posters**

Go to the [Pork Store](#) and enter item #

- English #04892
- Spanish #04046



# FMD, ASF, CSF Resources

**SPS SECURE PORK SUPPLY**

SPS PLAN | PORK PRODUCERS | VETERINARIANS | PACKERS | **REGULATORY OFFICIALS** | TRAINING MATERIALS

**Regulatory Officials**

**Disease Information**

Foot and mouth disease, classical swine fever, and African swine fever are the disease included in the Secure Pork Supply Plan. Review the information below to learn more about these diseases and additional resources available.

- Foot and mouth disease (FMD)
- Classical swine fever (CSF)
- African swine fever (ASF)**

**Regulatory Officials**

**Disease Information**

Foot and mouth disease, classical swine fever, and African swine fever are the disease included in the Secure Pork Supply Plan. Review the information below to learn more about these diseases and additional resources available.

- Foot and mouth disease (FMD)
- Classical swine fever (CSF)
- African swine fever (ASF)

**ASF Quick Information**

- Handout (1 page) [English](#) | [Spanish](#)
- Factsheet (5 pages) [English](#) | [Spanish](#)
- Video (English) [Watch \(6:22 mins\)](#) | [Download \(6mb\)](#)
- Video (Spanish) [Watch \(8:03 mins\)](#) | [Download \(32mb\)](#)

**USDA APHIS Resources**

- ASF Disease Response Strategy
- FAD PReP webpage (Foreign Animal Disease Preparedness and Response Plan)
  - FAD PReP Swine Industry Manual provides a broad overview of U.S. swine production methods and the procedures that may be used in the event of a highly contagious FAD outbreak.

**Center for Food Security and Public Health (CFSPH), Iowa State University Resources**

- CFSPH ASF webpage has ASF fact sheets, disease images, a PowerPoint presentation, vaccination guidelines, and many other ASF resources.
  - Guidelines for Classification of Events and Types of an ASF Outbreak and Response is designed to aid rapid decision making to facilitate response planning and development of business continuity plans in the event of an ASF outbreak in the United States or North America.
  - African swine fever wallchart [English](#) | [Spanish](#)

**World Organisation for Animal Health (OIE) Resources**

- OIE Terrestrial Animal Health Code ASF provides an overview of ASF and highlights diagnostic tests available.

Funding provided by USDA APHIS and the Pork Checkoff.  
 The Secure Pork Supply Plan involved collaboration between the swine industry, state and federal government officials, Iowa State University and the University of Minnesota.

