

# **US Swine Health Improvement Plan (US SHIP)**



## **House of Delegates Meeting (US SHIP HOD)**

**September 6 – 8, 2022**

**Doubletree by Hilton**

**Bloomington, MN**

Proposed Updates to Program Standards  
and Resolutions to be Considered

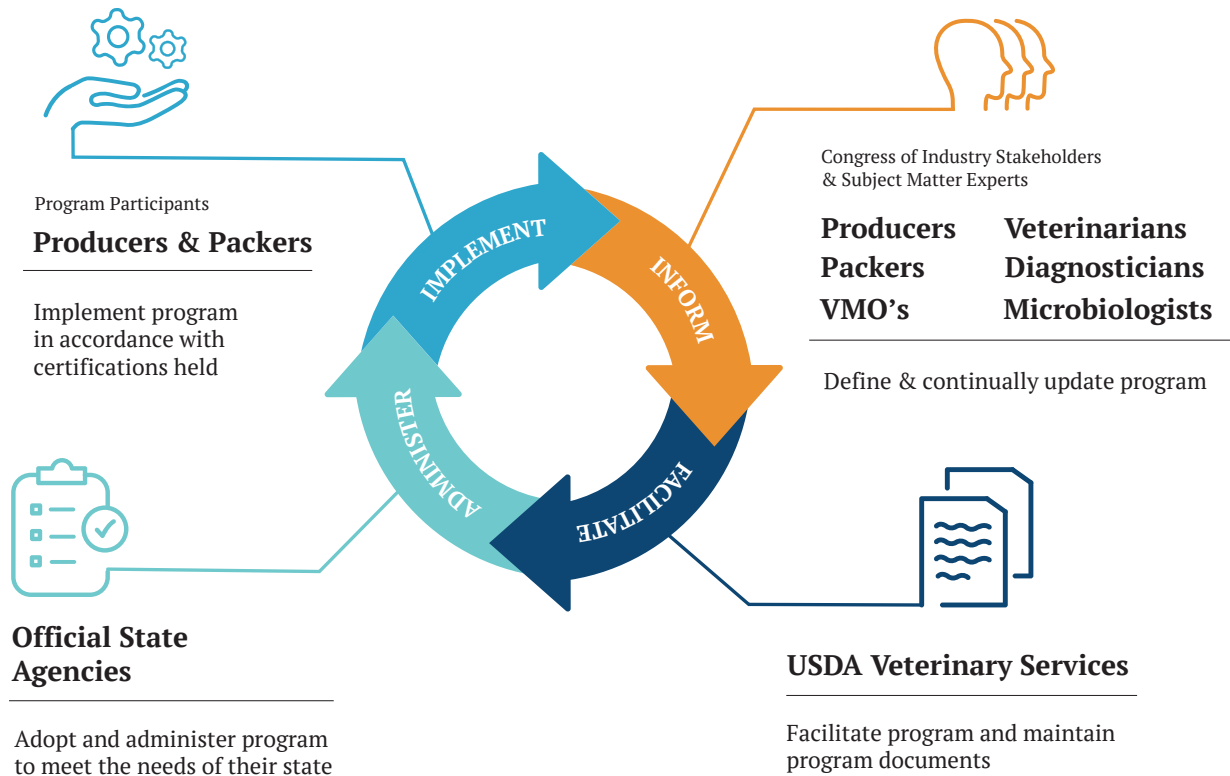


# US Swine Health Improvement Plan



## ASF-CSF Monitored Certification

“Piloting a proven platform for safeguarding, certifying, and bettering animal health”



## Industry, State, & Federal Partnership

Pathway for improving preparedness across US Pork Industry

US SHIP will establish a **National Playbook** of technical standards centering on **Prevention** and **Demonstration of Freedom of Disease** Outside of Control Areas in Support of Animal Health, Commerce, and Trade.

## Biosecurity, Traceability, and Disease Surveillance

# Table of Contents

---

Overview of US SHIP	4
Meeting Objectives	5
Agenda	7
Current Program Standards	9
Proposed Updates to Program Standards and Resolutions to be Considered in 2022:	
Proposed Updates to Program Standards	16
(1) Temporary modifications in feeding practices in the event of an introduction	17
(2) Integrating Secure Pork Supply biosecurity site plans	19
(3) Mitigating risks of direct contact to feral pigs in pigs with access to the outdoors	20
(4) Updating peacetime (US Negative) sampling and testing requirements	21
Proposed Resolutions	23
(1) Pathway towards 21st century traceability of inter-premises swine movements	24
(2) Establishing a standing feed bio-safety committee and plan of work	27
(3) Pilot a broadly applicable Responsible Imports program (imported feed ingredients)	28
(4) Market haul sanitation (trailers returning from terminal points of concentration)	29
(5) Certified Swine Sample Collector Training Program	31
Addition of Live Animal Marketing Operations	32
Case Study: Traceability of Inter-Premises Swine Movements in Other Export-Centric Countries	33
Acknowledgements	41

# Overview of US SHIP

---

US SHIP is being modelled after the National Poultry Improvement Plan (NPIP), a collaborative effort involving industry, state, and federal partners providing standards for certifying the health status of greater than 99% of commercial scale poultry and egg operations across the US.

US SHIP aims to establish a similar platform for safeguarding, improving, and representing the health status of swine across participating farm sites, supply chains, states, and regions. Such a working system is needed to support the current and future health assurance needs of the 21st century US pork industry.

The initial and principal objectives are to develop and implement an African Swine Fever (ASF)-Classical Swine Fever (CSF) Monitored Certification of US pork production operations (farm sites and slaughter facilities) modelled after the NPIP's H5/H7 Avian Influenza Monitored certification of US Commercial Poultry operations.

***The US SHIP ASF-CSF Monitored certification aims to mitigate risks of disease introduction and provide a practical means for demonstrating evidence of freedom of disease (outside of foreign animal disease control areas) in support of ongoing interstate commerce and a pathway towards the resumption of international trade over the course of a trade impacting disease response and recovery period.***

US SHIP is designed to be applicable across the full-spectrum of US pork industry participants from the small show pig farmer to the larger commercial producers, live animal marketing operations, and slaughter facilities. Deriving program standards that are relevant to and enabling participation across the full-breadth of US commercial pork industry participants is essential. A critical mass of participation is a foundational element necessary for being able to represent the health status of domestic pig production operations across supply chains, areas, states, and regions.

The National Pork Producers Council, National Pork Board, North American Meat Institute, United States Animal Health Association, American Association of Swine Veterinarians, and the American Association of Veterinary Laboratory Diagnosticians have each come forward with motions and/or other words of support for expanding the resources being provided to further the development of US SHIP. Most recently, a joint industry “ASF Strategy Work Group” led by board members of the National Pork Board and National Pork Producers Council in the Spring of 2022 identified “expediting the development of US SHIP into a permanent USDA program” as one of the key industry priorities to be pursued.

In summary, US SHIP will establish a national playbook of technical standards and associated certification recognized across participating states that centers on disease prevention and demonstration of freedom of disease outside of control areas in support of animal health, commerce, and trade.

**The time for such a national strategy is now!**

# Meeting Objectives

---

US SHIP House of Delegates Participant,

Thank you for your interest in US SHIP. We hope you are planning to attend the 2nd US SHIP House of Delegates (HOD) meeting to be held September 6 – 8th at the Doubletree by Hilton in Bloomington, MN.

Objectives of this forum of US pork industry stakeholders:

1. Further introduce and orientate interested US pork industry, state, and federal partners to this US Swine Health Improvement Plan (US SHIP) endeavor. (e.g., Scope, purpose, requirements for certification, operational structure, progress made over the past year, plans for ramping US SHIP to an officially recognized USDA Swine Health Program by 2024, and the outcomes of the charges set forth by a series of Resolutions passed at the inaugural US SHIP HOD).
2. Review, discuss, and vote upon proposed updates to the Program Standards and a series of Resolutions being brought forth for consideration.
3. Provide participatory based input towards US SHIP program content, direction, and to determine additional items of high relevance (related to US swine health and foreign animal disease preparedness) that are of interest to be explored further in the coming year.

The US SHIP HOD is a decision-making body composed of US pork industry participants and subject matter experts that aim to represent the interests of pork industry stakeholders across each of the states that have expressed an interest in participating in US SHIP.

Each state expressing interest has been allocated a specified number of voting delegates and the opportunity to invite up to 2 non-voting guests to attend the US SHIP HOD meeting. A formula was used to derive the number of voting delegates allocated to each state. The number of delegates includes a baseline allocation to each state, as well as an allocation proportionate to the capacity (inventory) of the Breeding Herd and Growing Pig production sites (respectively) enrolled in US SHIP that are located in each respective state.

Official State Agencies (OSAs) in conjunction with their state pork producer associations have been asked to seek volunteers to serve as voting delegates or non-voting guests in this US SHIP HOD. Each participating state's voting delegation is to be inclusive of the State Animal Health Official or their designee. State level participation in this US SHIP development project will be determined by the State Animal Health Official.

As of July 11, 2022, 31 states have expressed interest to participate, and a total 219 voting delegate invitations have been extended to participate in this 2nd US SHIP HOD. Delegates must be present to vote at the US SHIP HOD. Individual delegates attending the US SHIP HOD cannot cast more than one vote or cast votes on other delegates' behalf (i.e., one person/delegate = one vote). Please reach out to your respective US SHIP OSA or state pork producer association if you would like to be considered as a voting delegate or non-voting guest.

The US SHIP development project investigators, staff, and technical committees have worked earnestly to ensure the Program Standards and Resolutions being set forth for consideration represent practical and tangible.

US SHIP OSAs and US SHIP HOD meeting participants are encouraged to review and discuss the proposed Program Standards and Resolutions to be considered within their respective places of business and collectively prior to the US SHIP HOD meeting in September.

As you have the opportunity to review the enclosed information, the US SHIP office would certainly welcome any questions, suggestions, or concerns.

US SHIP Contact Information:

Email: [usship@iastate.edu](mailto:usship@iastate.edu)

Phone: 515-294-8611

Website: [usswinehealthimprovementplan.com](http://usswinehealthimprovementplan.com)

Thank you again for your interest in volunteering your time and insight towards helping form and shape this precedent setting endeavor that has the overarching goal of establishing a sustainable platform for safeguarding, certifying, and bettering the health of US swine and longer-term competitiveness of the US pork industry.

US Swine Health Improvement Plan Development Project Investigators and Staff,

Collaborating Investigators (By Institution):

Iowa State University:

Rodger Main (Principal Investigator)

Chris Rademacher

James Roth

Giovani Trevisan

Jeff Zimmerman

South Dakota State University:

Jane Christopher-Hennings

University of Illinois:

James Lowe

University of Minnesota:

Montserrat Torremorell

Jerry Torrison

US SHIP Staff:

Tyler Holck, Senior Program Coordinator

Jordan Kraft, Industry Extension Specialist

Leticia Linhares, Veterinary Coordinator

Giovani Trevisan, Veterinary Diagnostic and Epidemiologic Information

# Agenda

---

## Tuesday, September 6th

---

- 2:00 to 6:00 pm — US SHIP Registration (*Packet Pick-Up*)  
3:00 to 5:00 pm — US SHIP Official State Agency Session (*for State Animal Health Officials and State Pork Association Staff members*)  
6:00 pm — US SHIP Welcome Reception (*for all attendees*)

## Wednesday, September 7th

---

- 7:00 to 8:00 am — Meeting Registration (*Packet Pick-Up*)  
8:00 to 9:45 am — General Session
  - Welcome
  - US SHIP Progress Update
  - Industry, State, and Federal Remarks
  - Trade Implications
  - Evolution, Current State, & Future of ASF in the World's Pigs
  - US SHIP Going Forward

9:45 to 10:15 am — Break  
10:15 am to 12:00 pm — General Session
  - Technical Working Group Reviews  
Biosecurity, Traceability, and Sampling & Testing
  - Key Topics for Breakouts

12:00 to 1:15 pm — Lunch  
1:30 to 3:00 pm — Breakout Session I
  - Feed Biosafety I – Risk Mitigation of Ingredients from ASF/CSF Positive Regions
  - Sampling and Testing – Peace Time Surveillance, Expanding Assays, Aggregate Sample Types, Regional Modeling Outcomes to Inform Sampling Requirements, and Certified Swine Sample Collector
  - Site Biosecurity – Integration of Secure Pork Supply and Risk Mitigation of Feral Pigs

3:00 to 3:30 pm — Break  
3:30 to 5:00 pm — Breakout Session II
  - Feed Biosafety II – Risk Mitigation in the Event of an ASF/CSF Incursion
  - Market Haul Sanitation – Current Status, Industry Experiences, and Next Steps
  - Traceability – Traceability Standards Abroad, GAP Analysis, Pilot Project Learnings, and Scalability of a National Program in US.

6:30 pm — Banquet

## Thursday, September 8th

---

8:00 am to 12:00 pm — General Session

- Business Meeting

Business Meeting Procedures

Recap of Breakout Sessions

Discuss and Voting on Program Standards and Resolutions

9:45 to 10:15 am — Break

~12:00 pm — Adjourn

# Current Program Standards

---

## Program Standards as Passed at Inaugural US SHIP HOD

A summary of the program standards as passed at the inaugural US SHIP HOD meeting on August 23-24 2021 in Des Moines, IA are listed below. These are the requirements for conferring the US SHIP ASF-CSF Monitored Certification to participating Production Sites and Slaughter Facilities.

Note: Slaughter facilities will not be required to have 100% of their supply chain originating from ASF-CSF Monitored Certified production (farm) sites to participate in US SHIP..

### ENROLLMENT:

---

- ☒ Participating premises are to be enrolled with the US SHIP Official State Agency (US SHIP OSA) in the state in which the premises is located.

### VETERINARY SERVICE PROVIDER:

---

- ☒ Producers are to maintain a valid veterinary client-patient relationship with a licensed and federally accredited veterinarian.

### TRACEABILITY:

---

#### Premises level information

- ☒ Premises level demographic information for each participating premises is to be complete, accurate, current, and on-file with the US SHIP Official State Agency in which the premises is located.

The minimum required demographic information to be recorded for each premises is:	
<input checked="" type="checkbox"/> Premise Identification Number (PIN)	<input checked="" type="checkbox"/> Site Owner Contact Information
<input checked="" type="checkbox"/> Swine Owner Contact Information	<input checked="" type="checkbox"/> Common Name of Site
<input checked="" type="checkbox"/> Premise Type (Boar Stud, Breeding Herd, Farrow-Feeder/Finish, Growing Pig, etc.)	<input checked="" type="checkbox"/> Expected Site Capacity (Number of Breeding Swine and/or Growing Pigs)
<input checked="" type="checkbox"/> Site Location Information: Latitude and Longitude 911 Street Address, if one has been assigned	<input checked="" type="checkbox"/> Date of initial enrollment of the site in US SHIP, or date of first usage of the site by current swine owner
<input checked="" type="checkbox"/> Date of last usage of the site by swine owner (if applicable)	

## TRACEABILITY: CONT.

---

### Swine movement information

- ☒ Participants are to maintain records of the intrastate and interstate movements of live swine into and out of each participating premises.
- ☒ Participants must demonstrate competency in providing at least 30 days of movement information electronically in a common format (e.g., a prescribed CSV file) to the US SHIP Official State Agency in a timely manner (e.g. < 72 hours).

For participants with multiple participating premises within a given state, such competency can be demonstrated on a site-by-site basis or en-masse.

The minimum information required to be recorded for each movement is:		
<input checked="" type="checkbox"/> Date of movement	<input checked="" type="checkbox"/> Origin State	<input checked="" type="checkbox"/> Origin PIN
<input checked="" type="checkbox"/> Destination State	<input checked="" type="checkbox"/> Destination PIN	<input checked="" type="checkbox"/> Head in movement
<input checked="" type="checkbox"/> Animal type in movement		

### Semen movement information

- ☒ Boar stud premises participants are to maintain records of the intrastate and interstate movements of semen distributed out of each participating premises.
- ☒ Participants must demonstrate competency in providing at least 30 days of movement information electronically in a common format (e.g., a prescribed CSV file) to the US SHIP Official State Agency in a timely manner (e.g. < 72 hours).

For participants with multiple participating premises within a given state, such competency can be demonstrated on a site-by-site basis or en-masse.

The minimum information required to be recorded for each movement is:		
<input checked="" type="checkbox"/> Date of movement	<input checked="" type="checkbox"/> Origin State	<input checked="" type="checkbox"/> Origin PIN
<input checked="" type="checkbox"/> Destination State	<input checked="" type="checkbox"/> Destination PIN	<input checked="" type="checkbox"/> Number of units in shipment

### Animal Identification

- ☒ Certified ASF-CSF monitored participants must comply with existing state and federal laws regarding animal/group/lot identification.

## BIOSECURITY:

---

### Feed Supply

- ☒ The feeding of swill, garbage, or table waste that has the potential to include meat products is strictly prohibited.

## BIOSECURITY: CONT.

---

### Personnel

- ✓ Permitted individuals that have recently been exposed to livestock, feral/wild pigs or slaughter facilities in ASF/CSF/FMD positive regions or countries abroad should only visit farms or slaughter facilities in the US after observing a 5-day downtime since arriving in the US, and donning PPE (boots/coveralls, etc.) provided by farm site or slaughter facility being visited.

### Enrollment Survey (Biosecurity Practices)

- ✓ At enrollment, participating premises will complete a survey to provide a simplistic categorization of some of the high-level biosecurity practices being implemented at the premises. Information from this survey is to provide quantitative data to assess current standards of practice across a broad spectrum of program participants. Results will help provide insight towards consideration of additional biosecurity related program standards in the future.

## SAMPLING AND TESTING (DISEASE SURVEILLANCE):

---

- ✓ Initial 12-month Research Period: No Sampling and Testing Requirements of Participants

In the absence of an introduction of ASF/CSF, there will be no additional ASF/CSF sampling and testing requirements of participants beyond the current and ongoing systems of foreign animal disease (FAD) surveillance taking place across the US.

The first 12-months of the testing related activities will serve to develop informational and training materials, further modeling of disease spread and sensitivity of detection across herds and regions, and to conduct an expanded negative-cohort study of commercially available ASF-CSF PCR assays.

- ✓ Maintain compliance with ASF-CSF Sampling and Testing Requirements

US SHIP sampling and testing requirements will *vary by Production Site Type* and the *ASF-CSF status* of the US, State, or Region (**Tables 1, 2, and 3**).

The program is based on targeted testing of animals of poor or sub-standard health. Targeted sampling enhances both the efficiency of detection and the simplicity of sample collection across the spectrum of commercial and non-commercial farms in the US.

The frequency of on-site sampling is a function of time and is independent of the timing of pig movement, thereby providing for a uniform and continuous system of disease monitoring across production sites, areas, and regions.

US SHIP ASF-CSF tests are to be used for screening purposes only. Non-negative results would result in the testing laboratory (USDA NAHLN lab certified to conduct ASF-CSF testing) contacting the appropriate State and Federal animal health officials to initiate a Foreign Animal Disease Investigation (FADI) for the collection of additional samples for official ASF-CSF testing (confirmatory) purposes.

Table 1. Sampling and Testing Requirements for ASF-CSF Risk Level 1.

ASF/CSF Status = Level 1, US Negative (Peace Time)				Sampling & Testing Requirements (Alternative Options)		
				Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
Production Site Type	Specimen Type(s)	I or A <sup>1</sup>	Frequency / Timing of Sampling	# of Individuals	# of Pools (Groups of up to 5)	# of Samples
<b>Boar Stud</b> Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	Research Period: No Sampling and Testing Requirements			
<b>Breeding Herd</b> Breed to Wean, Breeding/ Gestation/ or Farrow Only, ± On-Site GDU or Isolation	Oral Swab Blood Swab Oral Fluids	I I I				
<b>Growing Pig</b> Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A				
<b>Farrow to Feeder Farrow to Finish</b>	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
<b>Small Holding</b> ≥ 100 or < 1,000 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I I or A	Research Period: No Sampling and Testing Requirements			
<b>Non-Commercial</b> < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A				

<sup>1</sup> I = Individual Sample, A = Aggregate (Group or Pen) Sample

Table 2. Sampling and Testing Requirements for ASF-CSF Risk Level 2.

<b>ASF/CSF Status = Level 2, US Positive, Operations Normalizing, and State or Region Negative (All US SHIP Testing is outside of Control Areas)</b>				Sampling & Testing Requirements (Alternative Options)		
Production Site Type	Specimen Type(s)	I or A <sup>1</sup>	Frequency / Timing of Sampling	Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
<b>Boar Stud</b> Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	2X per month	10	2	-
<b>Breeding Herd</b> Breed to Wean, Breeding/ Gestation/ or Farrow Only, ± On-Site GDU or Isolation	Oral Swab Blood Swab Oral Fluids	I I I	Monthly	10	2	-
<b>Growing Pig</b> Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	10	2	2
<b>Farrow to Feeder Farrow to Finish</b>	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
<b>Small Holding</b> ≥ 100 or < 1,000 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I I or A	Monthly	5	1	1 per 500, or 2 if > 500 pigs
<b>Non-Commercial</b> < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Quarterly	5	1	1

<sup>1</sup> I = Individual Sample, A = Aggregate (Group or Pen) Sample

Table 3. Sampling and Testing Requirements for ASF-CSF Risk Level 3.

<b>ASF/CSF Status = Level 3, US Positive, Immediately After Incursion, or if State or Region Positive. (All US SHIP Testing is Outside of Control Areas)</b>				Sampling & Testing Requirements (Alternative Options)		
Production Site Type	Specimen Type(s)	I or A <sup>1</sup>	Frequency / Timing of Sampling	Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
<b>Boar Stud</b> Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	Weekly	10	2	-
<b>Breeding Herd</b> Breed to Wean, Breeding/ Gestation/ or Farrow Only, ± On-Site GDU or Isolation	Oral Swab Blood Swab Oral Fluids	I I I	2X per month	10	2	-
<b>Growing Pig</b> Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	20	4	1 per 500 pigs with maximum of 8 per site
<b>Farrow to Feeder Farrow to Finish</b>	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
<b>Small Holding</b> ≥ 100 or < 1,000 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I I or A	Monthly	10	2	1 per 500, or 2 if > 500 pigs
<b>Non-Commercial</b> < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	5	1	1

<sup>1</sup> I = Individual Sample, A = Aggregate (Group or Pen) Sample

## **Administrative Requirements for Sampling & Testing:**

### **Sample Collection:**

Samples are to be collected and submitted to the testing laboratory under the guidance and direction of an officially licensed and accredited veterinarian.

### **Submission for Testing:**

Samples are to be submitted to qualifying veterinary diagnostic laboratories (i.e., USDA NAHLN labs certified to conduct ASF/CSF testing) in accordance with the policies and procedures of the laboratory to receive and test the samples.

### **Testing Laboratories:**

Testing for ASF-CSF Monitored Certification can only be performed in participating USDA NAHLN laboratories certified by the USDA to conduct ASF-CSF testing.

### **Accessibility and Reporting of Test Results:**

Test results are to be accessible (reported) to the Submitting Veterinarian, Program Participant, US SHIP Official State Agency, and the appropriate State Animal Health Officials and USDA Veterinary Services Agencies.

Samples with non-negative test results will be forwarded to the USDA Foreign Animal Disease Diagnostic Laboratory (FADDL) for additional (confirmatory) testing. Simultaneously, the testing laboratory will be responsible for contacting the appropriate State and Federal Animal Health Officials to initiate a Foreign Animal Disease Investigation and collection of additional samples for official ASF-CSF testing (confirmatory) purposes.

Consistent with existing procedures, reporting of confirmed positive ASF-CSF test results and response to detection is the responsibility of the appropriate State and Federal Animal Health Officials.

### **Test Methods (Assays):**

ASF-CSF diagnostic test methods (assays) shall be equivalent or comparable to USDA NAHLN ASFV and CSFV approved test methods, shall be well-supported by test validation and personnel training records in accordance with quality assurance standards set-forth by the American Association of Veterinary Laboratory Diagnosticians (AAVLD), and approved by the US SHIP Sampling and Testing Technical Committee.

# Proposed Updates to Program Standards

---

**Definition: Program Standards:** Requirements to be met or exceeded by enrolled producers and slaughter facilities to be certified in US SHIP.

Approval of Program Standards require majority vote by the US SHIP HOD.

The proposed updates to the Program Standards represent some portion of the work product and recommendations of US SHIP Technical Working Groups centering on topics related to Biosecurity (Feed Biosafety and Site Biosecurity) and Sampling and Testing convened in the spring 2022.

The principal charges provided to the various working groups stem back to the series of Resolutions passed at the inaugural US SHIP HOD meeting held in August 2021.

The Resolutions passed at the 2021 US SHIP HOD are available on the US SHIP website under Documents ([usswinehealthimprovementplan.com](https://usswinehealthimprovementplan.com)).

## SUBMITTED BY:

US SHIP Feed Biosafety Working Group

## SUBJECT MATTER:

Biosecurity: Mitigating Risks Through Temporary Modifications of Feeding Practices in the Event of an Incursion of ASF/CSF into US Swine

## PROPOSED STANDARD:

In the event of an ASF or CSF incursion into the US (ASF/CSF Risk Level 3; immediately after incursion, or if state/region positive), participants are to implement a temporary cessation of feeding spray-dried plasma, blood meal, meat and bone meal, intestinal peptide products, or other meal-based feedstuffs that have the potential to be of porcine origin.

This temporary cessation will be lifted if ingredients described above are sourced from:

- a. Approved suppliers with enhanced post-processing biosafety measures in place<sup>1,2</sup>
- b. States or regions at ASF/CSF Risk Level 2 (Operations normalizing, State or Region negative).
- c. US returns to ASF/CSF Risk Level 1 (US Negative).

<sup>1</sup> Requirements of post-processing treatment facilities:	<sup>2</sup> Approved post-processing treatments:
Enhanced post-processing treatment must occur at facilities that have premises level segregation from:	Thermal processing
Premises in which protein sources of porcine origin were initially heat treated (rendered or spray-dried) in accordance with feed grade safety requirements.	OR
AND	Ingredient quarantine/holding time
Finished feed facilities manufacturing feed for swine.	

Notes: Ongoing work of the US SHIP Feed Biosafety working group aims to further define the specifics of the approved post-processing thermal processing procedures (conditions) and quarantine/holding time requirements.

Additional information and context will be shared and discussed at the US SHIP HOD.

**Background/Reason:**

At the 2021 US SHIP House of Delegates Meeting, a program standard was passed which prohibits program participants from the “feeding of swill, garbage, or table waste that has the potential to include meat products”.

The underlying principle of this program standard is to reduce the risk of unknowingly and unintentionally disseminating ASF and/or CSF through porcine containing feedstuffs.

Building upon this approach and recognizing that ASF and CSF can be detected in meat and other products derived from infected pigs, discussions have occurred focusing on the potential for unintentional dissemination of ASF and/or CSF by feeding porcine-based feed ingredients in the event of an ASF/CSF incursion in the US. Principal concern of feeding heat-treated ingredients of porcine origin directly back to pigs during a time of crisis center on mitigating potential risks of cross-contamination with untreated product. Practices to mitigate such risks include implementation of enhanced post-processing biosecurity measures with premises level segregation from both facility of ingredient manufacture and feed manufacturing facility where ingredient is mixed into complete swine feed.

Therefore, the Feed Biosafety Working Group is presenting the proposed standard to be further discussed and considered by the US SHIP HOD in September 2022.

UPDATE TO PROGRAM STANDARD NUMBER:

2022 - 2

SUBMITTED BY: US SHIP Working Group on Site Biosecurity

SUBJECT MATTER: Integrating Secure Pork Supply Biosecurity Site Plans into US SHIP for Specified Production Site Types

**PROPOSED STANDARD:**

Boar Stud, Breeding Herd, Farrow to Feeder, Farrow to Finish, and Growing Pig sites (US SHIP Production Site Types) must be able to provide access to a completed Secure Pork Supply Biosecurity Plan to the OSA within 24 hours of the request.

Definitions of US SHIP Production Site Types:

<b>Boar Stud:</b>	Production site with mature boars (inventory) that distribute semen to other production sites. (e.g., boar stud, with or without on-site isolation).
<b>Breeding Herd:</b>	Production site with breeding females and house $\geq 1,000$ breeder or feeder swine. (e.g., breed-to-wean, breeding/gestation or farrowing only, with or without on-site gilt isolation/grow-out).
<b>Growing Pig:</b>	Production site with $\geq 1,000$ feeder swine (nursery, grower, or finisher).
<b>Farrow to Feeder or Farrow to Finish:</b>	Production site with breeding females, grow feeder swine for purposes other than breeding stock replacement for this particular farm site, and house $\geq 1,000$ breeder or feeder swine.
<b>Small Holding:</b>	Production sites with $\geq 100$ and $< 1,000$ breeder or feeder swine.
<b>Non-commercial:</b>	Production sites with $< 100$ breeder or feeder swine.

**Background/Reason:**

At the 2021 US SHIP House of Delegates Meeting a Resolution was passed to “commission a working group to integrate the Secure Pork Supply Plan and provide recommendations and next steps for the US SHIP program for a broadly applicable biosecurity site plan to be recognized nationally”.

The Site Biosecurity Working Group is presenting the proposed standard to be discussed and considered by the US SHIP HOD in September 2022.

UPDATE TO PROGRAM STANDARD NUMBER:

2022 - 3

SUBMITTED BY: US SHIP Working Group on Site Biosecurity

SUBJECT MATTER: Mitigating Risks of Direct Contact with Feral Swine

**PROPOSED STANDARD:**

Pigs with access to outdoors must be housed in such a manner that minimizes the risk of direct contact with feral swine.

**Background/Reason:**

Segregating domestic pigs from having direct contact with feral swine is a fundamental principle toward protecting the health of US domestic swine and hallmark of foreign animal disease preparedness.

In the absence of intentional biosecurity measures and plans in place, pigs with access to the outdoors can be of substantively increased risk to have direct contact with feral pigs in such areas and regions where feral swine are present.

UPDATE TO PROGRAM STANDARD NUMBER:

2022 - 4

SUBMITTED BY: US SHIP Sampling and Testing Technical Committee

SUBJECT MATTER: Peacetime Sampling (ASF/CSF Level 1, US Negative) Requirements

**PROPOSED STANDARD:**

“In the absence of an introduction of ASF/CSF, there will be no additional ASF/CSF sampling and testing requirements of participants beyond the current and/ongoing systems of foreign animal disease (FAD) surveillance taking place across the US.”

See updated Table 1. Sampling and Testing Requirements for ASF-CSF Risk Level 1 illustrated below for reference.

**Background/Reason:**

This proposed update to the Sampling and Testing Program Standards serves to remove the “Initial 12-month Research Period” language from the current ASF/CSF Risk Level 1 Program Standards as passed at the inaugural US SHIP HOD in August 2021.

With the support of, and in cooperation with the USDA, National Pork Board, and many collaborating partners, a series of the intended sampling and testing research related endeavors have continued to move forward over the course of the past 12 months.

A more detailed update concerning this series of sampling and testing research related developments in progress and ongoing needs will be reviewed in more detail at the US SHIP HOD in September 2022.

A highly notable peacetime (ASF/CSF Risk Level 1, US Free) surveillance development over the past year is that USDA APHIS stepped forward with a modification to the ASF/CSF Surveillance of Case Compatible Submissions (i.e., Systemic Disease, Tissue-Based Cases) at veterinary diagnostic labs in the USDA’s National Animal Health Laboratory Network. Veterinary diagnostic labs (VDLs) are a tremendous concentration point of sick-pig diagnostic case investigations occurring across the country. The modifications made to this active ASF/CSF surveillance program in the Fall 2021 created a substantive step-change in the real-time surveillance (screening) of ASF/CSF among case compatible submissions made to VDLs across the US.

Table 1. Sampling and Testing Requirements for ASF-CSF Risk Level 1.

ASF/CSF Status = Level 1, US Negative (Peace Time)				Sampling & Testing Requirements (Alternative Options)		
Production Site Type	Specimen Type(s)	I or A <sup>1</sup>	Frequency / Timing of Sampling	Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
<b>Boar Stud</b> Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I		No Additional Sampling and Testing Required		
<b>Breeding Herd</b> Breed to Wean, Breeding/ Gestation/ or Farrow Only, ± On-Site GDU or Isolation	Oral Swab Blood Swab Oral Fluids	I I I		No Additional Sampling and Testing Required		
<b>Growing Pig</b> Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A		No Additional Sampling and Testing Required		
<b>Farrow to Feeder Farrow to Finish</b>	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
<b>Small Holding</b> ≥ 100 or < 1,000 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I I or A		No Additional Sampling and Testing Required		
<b>Non-Commercial</b> < 100 Breeder or Feeder Swine.	Oral Swab Blood Swab Oral Fluids	I I A		No Additional Sampling and Testing Required		

<sup>1</sup> I = Individual Sample, A = Aggregate (Group or Pen) Sample

# Resolutions

---

**Definition: Resolutions:** Charges to pursue initiatives or further explore specific issues that aim to further inform US SHIP program content and direction.

Approval of Resolutions require majority vote by the US SHIP HOD.

The proposed Resolutions represent some portion of the work product and recommendations of US SHIP Technical Working Groups centering on topics related to Biosecurity, Traceability, and Sampling and Testing convened in the spring 2022. The principal charges provided to the various working groups stem back to the series of Resolutions passed at the inaugural US SHIP HOD meeting held in August 2021.

It should be understood that US SHIP is an industry, state, and federal partnership en-route to be a USDA Swine Health Program (modeled after NPPI's longstanding system of shared governance) that centers on certifying the health of US swine in accordance with well-defined program standards.

Any project-based work involving research, new system development, collaborative forums, outreach, education, and advocacy for US SHIP related efforts are only possible through the support and self-evident synergies working in partnership with the national pork producer, packer, and swine veterinary organizations (i.e., National Pork Board, National Pork Producers Council, Swine Health Information Center, North American Meat Institute, and the American Association of Swine Veterinarians).

The Resolutions passed at the US SHIP 2021 US SHIP HOD are available on the US SHIP website under Documents ([usswinehealthimprovementplan.com](https://usswinehealthimprovementplan.com)).

RESOLUTION NUMBER: 2022 - 1

SUBMITTED BY: US SHIP Traceability Working Group

SUBJECT MATTER: Pathway to 21st century traceability of swine movements in the US pork industry

WHEREAS, The number of live swine being transported within or across one or many state lines for breeding, growing, exhibition, or to be harvested has increased exponentially in recent decades in lock-step with the wide-spread adoption of multi-site pig production,

WHEREAS, The US pork industry has become increasingly dependent on interstate pig movement and the ability to export high quality pork products globally over this same period,

WHEREAS, The ability to proficiently track and trace inter-premises movements of live swine across the breadth of US pork industry participants is a foundational element of foreign animal disease preparedness. Similarly, in the event of an animal health emergency, such proficiencies are critical in being able to competently represent the health status of pigs across supply chains, areas, states, and regions over an extended response and recovery period,

WHEREAS, Current capabilities to proficiently track and trace the masses of swine moving intra and interstate have been identified as a “mission critical foreign animal disease preparedness vulnerability” for the greater expanse of the US pork industry,

WHEREAS, Recent experience in piloting a more comprehensive approach for capturing and integrating quality assured inter-premises swine movement information in near real-time across a subset of highly capable pork producers of varied ownership and production system structure feeding a single packing facility has proven to be more challenging than initially anticipated,

WHEREAS, Scalable approaches for being able to capably track and trace inter-premises movement of live swine in near real-time (within 7-days of movement) have become commonplace in various shapes and forms in pork exporting countries throughout the world. Such capabilities have been developed over the course of time as an outcome of being routinely implemented as a market-driven or compulsory requirement within their respective countries (i.e., figured out what works by doing / implementing),

WHEREAS,

Establishing the ability to proficiently track and trace inter-premises movements of live swine across the breadth of US pork industry participants and states would create a substantive, multi-faceted, and sustainable step change in the state of foreign animal disease preparedness across the US pork industry.

Now, therefore be it RESOLVED:

US SHIP House of Delegates supports moving forward with a series of initiatives necessary to enable the future consideration and implementation of a program standard requiring “inter-premises movements of swine to be deposited (reported) to an approved repository of inter-premises swine movement records within 7 days of delivery to the premises of destination.”

**Envisioned roles and responsibilities of implementing such a program standard:**

**Participating Producers/Packers:** Responsible for depositing (reporting) inter-premises movements of live swine to an approved repository of swine movement records.

**Approved Repository(s) of Inter-Premises Swine Movement Records:** Responsible for receiving and housing the inter-premises movement records and providing permissioned access of such records to the appropriate US SHIP Official State Agency for periodic compliance verification, and to the appropriate veterinary medical officials in times of an animal or public health (food safety) emergency.

National Pork Board’s investment in the AgView platform is an example of a software platform currently being developed and used to receive, house, and share swine movement records with the appropriate veterinary medical officials in a time of need.

**Note:** It is also envisioned that certification in US SHIP and the working systems established for maintaining compliance with a program standard associated with reporting inter-premises movements of swine could play a significant role in the future for streamlining and improving the current methods producers and states use when permitting the interstate movement of swine for breeding, growing, or exhibition.

**Series of Initiatives Proposed:**

1. Formation of a multidisciplinary (Industry, State, & Federal) working group to fully vet:
  - a. Alternative approaches (options/structure/strategy) that could be taken towards scalably meeting a prescribed standard requiring reporting of inter-premises movements of swine to an approved repository within 7 days.
  - b. Clearly defining the requirements, functionality, and operational covenants necessary for entities to be recognized as an “approved repository of inter-premises swine movement records”.

2. Complete a more in-depth study and review of the various approaches and systems being implemented in the various pork exporting countries around the world that are currently meeting this prescribed inter-premises movement of swine reporting standard of practice.
3. Complete further study of the various approaches and systems US pork producers and packers are using to capably capture the inter-premises swine movement information that is inclusive of the US SHIP program standard requirements (i.e., date, PIN of origin, state of origin, PIN of destination, state of destination, animal type in movement, and number of head in movement).
4. Advocate for the development, further development, and/or adoption of built for purpose applications that could be used by a broad range of US pork industry participants to facilitate user-friendly and quality-assured compliance with the prescribed inter-premises swine movement reporting standard.
5. Expand proof of concept pilot projects that center on the entirety of supply chains to slaughter facilities demonstrating competence in successfully and sustainably achieving the prescribed program standard for reporting quality assured swine movement records within 7 days of movement.

RESOLUTION NUMBER: 2022 - 2

SUBMITTED BY: US SHIP Feed Biosafety Working Group

SUBJECT MATTER: Establishment of Standing Feed Biosafety Committee and Plan of Work

WHEREAS, The US Swine Health Improvement Plan (SHIP) is a collaborative effort involving industry, state, and federal officials tasked with establishing a “national playbook” of technical standards associated with biosecurity, traceability, and sampling/testing,

WHEREAS, US SHIP presents as a platform for incorporating broadly applicable standards of practice related to mitigating the risks of disease introduction through feedstuffs into a swine health certification program that is national in its scope and recognition,

WHEREAS, Knowledge, recommendations, and best practices are expected to evolve and improve over time necessitating an organizational structure to facilitate discussion of the latest research findings and provide up-to-date recommendations for consideration by the US SHIP House of Delegates.

Now, therefore be it RESOLVED:

The US SHIP House of Delegates requests the commissioning of a coordinated, standing committee (Feed Biosafety Committee) to discuss the latest scientific findings related to feed biosafety and provide recommendations for consideration by the US SHIP House of Delegates.

This working group will include a broad range of stakeholders representing US SHIP stakeholders, swine producers, feed ingredient suppliers and feed industry representation, state, and federal partners. Their charge will be to periodically review the latest information and provide recommendations for consideration by the US SHIP House of Delegates.

Topics for consideration by the Feed Biosafety Committee include:

1. Consider recommendations concerning the potential for incorporating program standards into US SHIP associated with mitigating the risks of introduction of ASF/CSF via imported feed ingredients. These recommendations are to be inclusive of the methodology of how any such standards would be communicated, monitored, and/or periodically verified.
2. Consider recommendations and next steps to the US SHIP program to reduce risk of disease transmission in domestically sourced feedstuffs.
3. Coordinate discussion of practices and standards for consideration to reduce the risk of pathogen transmission through transport of swine feed and ingredients.

RESOLUTION NUMBER: 2022 - 3

SUBMITTED BY: US SHIP Feed Biosafety Working Group

SUBJECT MATTER: Pilot demonstration of a broadly applicable Responsible Imports program across a substantive subset of US pork industry participants and feed industry stakeholders.

WHEREAS, The US Swine Health Improvement Plan (SHIP) is a collaborative effort involving industry, state, and federal officials tasked with establishing a “national playbook” of technical standards associated with biosecurity, traceability, and sampling/testing,

WHEREAS, There is a recognized risk of disease transmission from both feed ingredients and whole feed and research and risk assessments continue to be conducted to assess the risks associated with importing feed ingredients from ASF-CSF positive regions and potential mitigation strategies to reduce or eliminate those risks,

WHEREAS, US SHIP presents as a platform for incorporating broadly applicable standards of practice related to mitigating the risks of disease introduction via imported feedstuffs into a swine health certification program that is national in its scope and recognition.

Now, therefore be it RESOLVED:

The US SHIP House of Delegates requests the pursuit of a demonstration project across a substantive subset of US SHIP pork industry participants and feed industry stakeholders.

Participants in the demonstration project would affirm:

Feed biosafety risks associated with feed ingredients being imported (manufactured, grown, processed, or packed) from regions or countries known to have ASF/CSF actively circulating in their swine populations are being mitigated via one of the following risk mitigation procedures:

1. Excluded from use in swine diets; or
2. The imported ingredient or resulting finished feed is to be stored for a scientifically-based holding time and temperature conditions demonstrated to inactivate the respective virus; or
3. The ingredient or resulting finished feed is to be processed or treated using scientifically-based methods at conditions or with feed additives at a dose demonstrated to inactivate the respective virus.

Within strategies 2 and 3, practices are to be utilized to avoid cross-contamination by preventing contact of the product with any source of ASFV/CSFV.

RESOLUTION NUMBER: 2022 - 4

SUBMITTED BY: US SHIP Market Haul Sanitation Working Group

SUBJECT MATTER: Market Haul Sanitation

WHEREAS, Livestock trailers returning from terminal points of concentration (slaughter facilities, buying stations, or cull markets) that have not been cleaned and disinfected present as a primary and well understood risk factor for indirectly recirculating, amplifying, and broadly distributing disease causing agents in US swine,

WHEREAS, Live-haul sanitary standards (practices) for cleaning and disinfecting livestock trailers returning from terminal points of concentration are widely variable,

WHEREAS, In the event of a trade-impacting disease introduction into US swine, in the absence of being cleaned and disinfected between loads, live-haul transport trailers returning from terminal points of concentration present as principal risk factor for recirculating, amplifying, and broadly distributing said disease throughout the US. Such live-haul transport related disease transmission risks would apply during the pre-identification phase and throughout the extended response and recovery period,

WHEREAS, The current lack of infrastructure and inability to clean and disinfect livestock trailers returning from terminal points of concentration is a well-understood industry level vulnerability of national importance to the longer-term sustainability and competitiveness of the US pork industry,

WHEREAS, Well-defined traceability and live-haul sanitary standards are commonly the two hallmark components of swine health control and improvement programs being implemented in other export centric countries globally,

WHEREAS, The 2021 US SHIP HOD put forth a charge to convene a working group on “market haul sanitation” and provide a summary of findings and recommendations concerning suggested next steps to the 2022 US SHIP HOD,

WHEREAS, The series of efforts proposed below are the principal recommended go forward actions (next steps) stemming from the US SHIP Working Group on Market Haul Sanitation convened in Spring 2022.

Now, therefore be it RESOLVED:

US SHIP House of Delegates supports moving forward with a series of efforts leading towards the future consideration of a program standard requiring livestock trailers returning from terminal points of concentration (e.g., slaughter facilities, buying stations, or cull markets) to be cleaned and disinfected prior to returning to farm sites or farm site collection points (depots).

The initiatives proposed would serve to further inform:

- Current standards of practice and existing infrastructure
  - Infrastructure needs and the various options and approaches to fill existing deficits
  - Systems, tools, and alternative approaches that would be necessary to monitor compliance (auditable log of key events) within the context of a broadly applicable program
  - Operational costs and implications
  - Pace for phasing in a program standard into US SHIP related to requiring livestock trailers returning from terminal points of concentration be cleaned and disinfected prior to returning to farm sites or farm site collection points (depots)
1. Pilot a suite of compatible options that provide a scalable means for monitoring (measuring) the percentage of livestock trailers delivering pigs to commercial slaughter facilities that are meeting the prescribed market haul sanitation standard to be considered.
    - a. The systems/tools and alternative approaches explored, developed, and implemented in the pilot aim to provide a platform for scalably measuring the status-quo, monitoring progress being made over time, better understanding existing infrastructure and associated capabilities, and quantify infrastructure gaps.
    - b. Auditable log of key events (trailer washes and deliveries to commercial slaughter facilities)
    - c. The pilot project would serve to identify, develop, and use a suite of scalable tools, systems, or options that would be necessary to monitor the implementation of a program standard requiring livestock trailers returning from terminal points of concentration be cleaned and disinfected prior to returning to farm sites or farm site collection points (depots).
  2. Establish a working forum and associated educational materials for sharing of best practices and examples of the various systems, technologies, and approaches being implemented by:
    - a. Pork producers and swine slaughter facilities (domestically and abroad) currently achieving this standard of practice en-masse.
    - b. US poultry producers sustainably achieving this standard of practice.
  3. Explore educational, policy, or federal funding related opportunities associated with permitting and constructing such livestock truck-wash facilities in support of US animal agriculture and our nation's food supply.
  4. Advocate for applied research and development of engineering based improvements to reduce the labor and enhance the consistency, sustainability, and quality of high throughput market-haul washout procedures.

RESOLUTION NUMBER: 2022 - 5

SUBMITTED BY: Justin Brown, Swine Medicine Education Center,  
Iowa State University

SUBJECT MATTER: Certified Swine Sample Collector (CSSC) Training Program

WHEREAS, The US Swine Health Improvement Plan (SHIP) is a collaborative effort involving industry, state, and federal officials tasked with establishing a “national playbook” of technical standards associated with biosecurity, traceability, and sampling/testing,

WHEREAS, The USDA and National Pork Board (NPB) have recently funded the development of a Certified Swine Sample Collector (CSSC) training program,

WHEREAS, The principle purpose of the CSSC training program is to expand the number of well-trained individuals to assist animal health officials and category II accredited veterinarians in collecting diagnostic samples during an FAD response,

WHEREAS, The CSSC training program content and associated resources have been developed by collaborators at Iowa State University, the American Association of Swine Veterinarians, the Multistate Partnership for Security in Agriculture, and National Pork Board and are available on the Secure Pork Supply Plan website,

WHEREAS, State animal health officials are currently (2022) in the early stages of rolling out the CSSC training program within their respective states.

Now, therefore be it RESOLVED:

The US SHIP House of Delegates acknowledges the rigors around which the CSSC training program was built and recognizes that CSSCs will be an important resource to collect samples identified within the US SHIP surveillance protocols.

# Addition of Live Animal Marketing Operations

---

A Resolution passed at the 2021 US SHIP HOD concerning live animal marketing channels.

A small working group of individuals that own or operate live animal marketing operations was subsequently convened by Dr. Bret Marsh (State Animal Health Official, IN).

The live animal marketing operations involved demonstrated a significant interest in being provided the opportunity to actively contribute, participate, and pursue certification in US SHIP.

Live animal marketing operations aggregate and move the vast majority of the non-select weight pigs and spent breeding stock onto slaughter facilities throughout the country.

The principal outcome of this working group included a formal request to include “Live Animal Marketing Operations” as an officially recognized “Classification” (enabling voting representation at the US SHIP HOD) and “Premises Site Type” within the scope of US SHIP.

This working group provided the following definition of “Live Animal Marketing Operations”.

**Live Animal Marketing Operation:** A dealer with a livestock yard/buying station (facility) that markets > 100 swine / week for resale of such swine to slaughter facilities.

The swine are assembled with the intent to transport them to a slaughter facility.

This request for including of this segment of the US pork industry with US SHIP’s scope was approved by the US SHIP General Conference Committee.

Thus, Live Animal Marketing Operations are being provided the opportunity to have voting representation at the US SHIP HOD and pursue the ASF-CSF Monitored Certification in US SHIP.

Additional information concerning the addition of “Live Animal Marketing Operations” within the scope of US SHIP will be discussed further at the US HOD in September.

# Traceability Case Study

## SEGMENT ON INTER-PREMISES MOVEMENT OF LIVE SWINE

---

The inaugural US SHIP House of Delegates was held on August 23-24 2021, in Des Moines, Iowa; whereas, the resolution 2021-1 containing the subject matter “Traceability Case Study” was approved. This work aims to address the request of the respective US SHIP resolution.

**Background for the US SHIP resolution 2021-1:** *“conduct a case study of traceability standards of practices and systems used among other export-centered pork-producing countries from which future technical standards may be developed and implemented for the US SHIP.”*

The World Organisation for Animal Health ([OIE](#)), an international intergovernmental organization, whereas the United States (U.S.) is a signatory, defines [animal traceability](#) as the ability to follow an animal or group of animals during all stages of its life. This work *presents* key learning points of successful traceability programs and standards implemented among a selected number of swine producers and pork export-centered countries of Australia, Brazil, Canada, and Denmark. Additionally, this work presents the U.S. swine traceability standards, status, and current GAPs (Appendix A).

Pending the country where a traceability system is implemented, the animal traceability practices include but are not limited to:

- Establishments where animals are kept are identified and registered;
- Animal traceability is implemented across the entire swine supply chain;
- The registration of animal movements is routinely performed in a timely manner when an animal or group of animals is (are) introduced into or leaves an establishment;
- Electronic software and online tools for data entry are used as a conduit;
- Data entry, system maintenance, and participant support are administered and provided by a bureau housed within the country’s specific animal traceability responsible entity;
- A common practice is to have a database containing premise demographic information that can be tied together with the minimal number of data fields associated with animal movement events;
- A common practice is to record the minimal animal traceability data that includes at least animal movement date, establishment identification for origin and destination, corresponding sender/receiver addresses, heads in movement, animal type, and in some cases the trailer tag;
- Animal traceability systems are implemented and maintained by the competent animal health authority either in partnership with stakeholders, e.g., the pork producers association (Canadian Pork Council, Australian Pork Limited), national animal health agency (Ministry of Environment and Food, Agriculture and Fisheries of Denmark), or regulated by a national agency and implemented and maintained by designated state animal health agencies (Brazil);
- In a time of need, all swine supply chain animal traceability data is readily accessible to the appropriate and permissioned Veterinary Medical Officials for emergency response and business continuity support.

In general, the animal traceability systems implemented in those countries follow the OIE Terrestrial Animal Health Code [Chapter 4.3](#), which provides the general recommendations for an animal traceability system. In the U.S., no industry or official approach is currently implemented to routinely collect and store swine movement data in a centralized state or national database outside the place of the business organization. There is a learning opportunity for the U.S. from those other pork-exporting countries on the feasibility of implementing an efficient system for collecting, collating, storing, and retrieving animal traceability data on a near-real-time basis. Animal traceability can be accomplished and is crucial for having readily available data to the competent Animal Health Authority to support decisions during unforeseen needs and permitting business continuity.

## Appendix A

The U.S. 9 CFR § 71.19 (<https://www.law.cornell.edu/cfr/text/9/71.19>) regulates the *“Identification of swine in interstate commerce.”*

Prior to moving a swine across states borders, an interstate swine movement report should be issued and must contain animal traceability data. This procedure is essentially known as a certificate of veterinary inspection (CVI). The report should contain data for the swine production system, including the name, location, and premises identification number of the premises from which the swine are to be moved; the name, location, and premises identification number of the premises to which the swine are to be moved; the date of movement; and the number, age, and type of swine to be moved. Additionally, the competent state animal health authority requires health-related information, e.g., accredited veterinarian information, to issue a movement permit across state borders.

When a swine is not moved within a production system or is not kept as a group after being moved, it should be individually identified using either ear tags, United States Department of Agriculture (USDA) approved backtag, ear notching, tattoos on the ear or inner flank if recorded in the book of record of a swine registry association, or official swine tattoos or an at least a 4-character tattoo when moving to slaughter.

Also, when a swine moves interstate within a swine production system and once a month, a paper or electronic producer signed movement report data must be sent to APHIS showing how many animals were moved in the past month, the premises from which they were moved, and the premises to which they were moved.

Interstate swine movement is regulated, and records for interstate swine movement within a swine production system should be kept for three years after their creation date. Even though an efficient animal traceability system is a key component for international trade, no industry or official approach is currently implemented in the U.S. to routinely collect and store swine movement data on a centralized database outside the place of business, making it readily available to the competent Animal Health Authority in the event of unforeseen needs. Additionally, the recording of intrastate swine movements is rarely captured beyond business accounting purposes. The lack of such infrastructure and scalable, comprehensive system capable of being kept current leaves the U.S. swine industry vulnerable and at risk of business disruption in the event of a foreign animal disease introduction. The nonexistence of such a system also positions the U.S. at a low competitive edge in responding to animal health threats, negatively impacting our trade potential and jeopardizing our food sovereignty.

On the other side, successful animal traceability programs and standards are currently implemented among other swine producers and pork export-centered countries, e.g., Australia, Brazil, Canada, and Denmark.

Implemented traceability programs in those countries have a common goal to collect, collate, and have readily available animal movement data to the competent Animal Health Authority. Collected data is useful for animal health decisions and include various applications, e.g., animal movement controls, inspection and certification in a trade, management of disease outbreaks and food safety incidents, and early response and notification systems. Those animal traceability systems are nationally scalable and efficient in collecting animal movement data from all the swine supply chains on a real-time/near-real-time basis. A high-level overview of the traceability system implemented in those four countries is summarized in Table (1).

Table 1: Characteristics of animal traceability systems implemented in four pork producer countries.

Name	Responsible entity	Database type	How is data entered?
<b>Canada</b> PigTRACE	Industry, Canadian Pork Council (CPC)	National	Electronically within 7 days of departure & arrival using either direct data input, CSV file upload, automatic .xml format, 3rd party entry (e.g., Metafarms, PigCHAMP, cross-platform using a mobile device).
<b>Brazil</b> GTA	Regulated by the Ministry of Agriculture, Livestock and Food Supply (MAPA) and implemented/ maintained by the state animal health authority	State maintained with a connection to a centralized national database (MAPA)	Electronically for each animal or group of animals prior to the movement. An Animal Movement Permit (GTA) is issued at the origin state animal health authority before any animal movement. The receiver must report the movement within 30 days of receiving it. Each year the producer needs to confirm the actual inventory.
<b>Denmark</b> CHR	Ministry of Environment and Food, Agriculture and Fisheries of Denmark	National	Electronically within 7 days of the movement. Data for pig movements can be entered through the web portal or mobile APP enter, FTP transfer (XML schemas), or for a fee can be entered by the CHR department. The producer needs to confirm the CHR information and the actual inventory each year.
<b>Australia</b> PigPass	Industry, Australian Pork Limited (A producer-owned organization)	National	Electronically. The sender of pigs must report the movement in the PigPass database prior to the movement, and the receiver is required to report the movement within 48 hours of receiving it. Movement can be registered using a mobile device or a computer-based online accessing tool.
Name	Cost	Type of movement recorded	Who owns the data?
<b>Canada</b> PigTRACE	Access to the national database is provided for free. Ear tags for animal identification can only be bought from the PigTrace program.	All swine movements, including rendering (intra-province, inter-province, international)	Administered by Canadian Pork Council. Regulated by the Canadian government
<b>Brazil</b> GTA	Free. The state Animal Health Authority maintains it. Some states charge a fee to issue the GTA. Non-reporting of animal movements is subject to fines.	All swine movements (intra-state, inter-state, international). Animal movements within the same epidemiological unit do not need to have a GTA	Official Veterinary System (Sistema Veterinário Oficial) at the State Animal Health Agencies and national database with the Federal Animal Health Authority (MAPA).

Name	Cost	Type of movement recorded	Who owns the data?
<b>Denmark</b> CHR	Free. Maintained by the governmental agency Ministry of Environment and Food, Agriculture and Fisheries of Denmark	All swine movements (intra-province, inter-province, international)	Denmark government. Central Husbandry Register (CHR) and Ministry of Environment and Food, Agriculture and Fisheries of Denmark official agency
<b>Australia</b> PigPass	Free. Maintained by the Australian Pork Limited	All swine movements (intra-state, intra-territory, inter-state, inter-territory, international). Animal movements within the same ownership to another Property Identification Code (PIC) only require reporting to the database within two working days (no need for individual identification).	Administered by Australian Pork Limited. Endorsed by Agriculture Ministers across Australia.
Name	Is data shared? How?	Base for traceability	Is premise ID (identification number) required?
<b>Canada</b> PigTRACE	No. Centralized user-protected database with the capability of having permissioned access to the competent Animal Health Authority.	Premises, unique identification number to a parcel of land where livestock or poultry may be located	Yes. For all premises having pigs or any type of contact with pig.
<b>Brazil</b> GTA	No. The data is used and accessed by the corresponding State or Federal Animal Health Authority to support herd animal health decisions.	Each epidemiological unit has an establishment code (código do estabelecimento) with additional identification for its corresponding owner.	Yes. Each epidemiological unit must have an establishment code (código do estabelecimento)
<b>Denmark</b> CHR	Government-owned. Accessible on the internet both for the farmer and for the herd veterinarian who holds the mandatory veterinary advisory service contract.	CHR number (holding number). CHR has information for the holding facility address, geocoordinates (latitude and longitude), keeper and owner name, address, contact numbers and ID or social security number, the number of animals, and veterinary events.	Yes. All places holding animals receive a holding number (CHR number)
<b>Australia</b> PigPass	No. Owned by the Australian Pork Limited with permission to be used by the competent Animal Health Authorities.	PigPass uses Property Identification Code (PIC), registered pig identification (ear tags and tattoos), and pig movement documentation (the PigPass NVD) for complete animal movement traceability.	Yes. PIC is an eight-digit alphanumeric code to identify lands used to keep livestock uniquely.

Name	Minimal animal movement information	Record Keeping requirements	Reporting Period
<b>Canada</b> PigTRACE	Both sender and receiver must report. Fields include location origin/destination, date of departure/arrival, license plate, quantity, and animal IDs.	All pig identification, movement, and location information reported to PigTrace are kept in records for five (5) years.	<b>Within seven days of shipping or receipt of pigs</b> , deadstock, or parts of deadstock.
<b>Brazil</b> GTA	The GTA must contain information for species, the number of animals, origin, sex and age or animal type, destination, movement purpose, date and place of issue, issuer, and expiring date.	Maintained for an undetermined time at the official database. Paper GTA copies must be archived for five years at the premise's place of business.	Mandatory and issued <b>prior to moving</b> within the Animal Health Authority where the establishment of origin is registered. The recipient is obliged to notify, within 30 days after transit, the arrival date and the total number of animals received to the Animal Health Competent Authority office where the establishment of destination is registered.
<b>Denmark</b> CHR	For each batch of pigs being moved, the number of pigs moved, date and time of shipment, CHR of holding of origin, CHR holding of destination and registration number, and country code of the vehicle used for the transportation are recorded.	Maintained for an undetermined time in the official database.	Movements of pigs Into and out of the herd must be registered in the CHR <b>within seven days</b> .
<b>Australia</b> PigPass	Name or Trading name of the owner of pigs; PIC that identifies the property from which the pigs were dispatched and physical address of where the journey commenced; tattoo/brand number linked to the origin PIC (if brand is used to identify pigs in the consignment); date and time of dispatch of the pigs; number and description of pigs dispatched; whether the pigs have been bred by the vendor and, if not, the period of time the pigs have resided on the property; name, address, phone number, and signature of the consignor/ person completing the document; intended destination PIC of the pigs or the destination property/ place location.	Copies of movement documents must be kept for three years by the vendor and purchaser of the pigs. The movement information must be confirmed as uploaded to the database by the receiver of the pigs within two days (48 hours) of the pigs' arrival on the property.	<b>Prior to moving</b> by the sender. The receiver of the pigs is required to report the movement to the PigPass database within 48 hours of receipt

Name	Any fine for not being part of such a system?
<b>Canada</b> PigTRACE	Yes. PigTrace is mandatory by law through the federal Health of Animals Regulations and enforced by the Canadian Food Inspection Agency (CFIA). The CFIA can issue non-compliance letters and fines (up to \$50,000) to those who do not comply.
<b>Brazil</b> GTA	Yes. It is mandatory by law to issue a GTA before any animal movement. Each state decides and applies the fines for not complying with the system.
<b>Denmark</b> CHR	Yes. Failure to comply with the provisions may affect the farmer's European Union subsidies as a consequence of cross-compliance. Furthermore, the farmer may be fined following national legal action
<b>Australia</b> PigPass	Yes. Failure to comply with the reporting requirements may result in a penalty notice.

## Acknowledgments

The US SHIP thanks Dr. Diego Viali dos Santos, Auditor Fiscal Federal Agropecuário of the Brazilian Ministry of Agriculture, Livestock and Food Supply (MAPA) and Jeff Clark, director of PigTRACE Canada (Canadian Pork Council), for sharing information and helping compile this report.

## References:

Agriculture & Food Council; Pig Meat Production in Denmark - Traceability <https://agricultureandfood.co.uk/pig-production/primary-production/trackability> Accessed April 22, 2022.

Birkegård AC, Fertner ME, Jensen VF, Boklund A, Toft N, Halasa T, et al. Building the foundation for veterinary register-based epidemiology: A systematic approach to data quality assessment and validation. *Zoonoses Public Health*. 2018;65:936–46. pmid:30105809. <https://onlinelibrary.wiley.com/doi/full/10.1111/zph.12513>

Danish Pig Research Centre; The Danish Product Standard <https://pigresearchcentre.dk/DANISH-quality-assurance-scheme/The-Danish-Product-Standard> Accessed April 20, 2022.

Ministério da Agricultura Pecuária e abastecimento; Instrução Normativa Nº 9, De 16 De Junho De 2021 <https://www.in.gov.br/en/web/dou/-/instrucao-normativa-n-9-de-16-de-junho-de-2021-327689557> Accessed March 16, 2022.

Ministério da Agricultura Pecuária e abastecimento; Booklet of laws for national transit of animals <https://www.in.gov.br/en/web/dou/-/instrucao-normativa-n-9-de-16-de-junho-de-2021-327689557> Accessed March 16, 2022.

Ministério da Agricultura Pecuária e abastecimento; Manual de procedimentos para o trânsito de suínos versão 13.1. [https://www.gov.br/agricultura/pt-br/assuntos/saude-animal-e-vegetal/saude-animal/transito-animal/arquivos-transito-nacional-manuais/manual\\_gta\\_suinov-13-1.pdf](https://www.gov.br/agricultura/pt-br/assuntos/saude-animal-e-vegetal/saude-animal/transito-animal/arquivos-transito-nacional-manuais/manual_gta_suinov-13-1.pdf) Accessed April 12, 2022.

Ministério da Agricultura Pecuária e abastecimento; Instrução Normativa Nº 79, De 14 De Dezembro De 2018 [https://www.in.gov.br/materia/-/asset\\_publisher/Kujrw0TZC2Mb/content/id/55444279/do1-2018-12-17-instrucao-normativa-n-79-de-14-de-dezembro-de-2018-55444116](https://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/55444279/do1-2018-12-17-instrucao-normativa-n-79-de-14-de-dezembro-de-2018-55444116) Accessed April 12, 2022.

Ministério da Agricultura Pecuária e abastecimento; Suídeos-Manual de procedimento para o trânsito de suídeos <https://wikisda.agricultura.gov.br/pt-br/Sa%C3%BAdo-Animal/tr%C3%A2nsito-suideos> Accessed April 25, 2022.

Ministry of Environment and Food, Agriculture and Fisheries of Denmark; Livestock Identification, Registration and Traceability [https://www.foedevarestyrelsen.dk/english/Animal/AnimalHealth/Animal%20diseases/Monitoring\\_control\\_animal\\_diseases/Livestock\\_identification\\_registration\\_and\\_traceability/Pages/default.aspx](https://www.foedevarestyrelsen.dk/english/Animal/AnimalHealth/Animal%20diseases/Monitoring_control_animal_diseases/Livestock_identification_registration_and_traceability/Pages/default.aspx) Accessed April 22, 2022.

Nielsen, A.C. Data warehouse for assessing animal health, welfare, risk management and – communication. Acta Vet Scand 53, S3 (2011). <https://doi.org/10.1186/1751-0147-53-S1-S3> <https://actavetscand.biomedcentral.com/articles/10.1186/1751-0147-53-S1-S3>

Nielsen, L. H Cost of biosecurity at a farm level – a good investment. In: Løtvedt, S.M., Olševskis, E., Westergaard, J.M., Huda, A. Veterinary Contingency Planning The Proceedings of a Nordic-Baltic Seminar on contingency planning with focus on vaccination, animal welfare, wildlife and costs, 3-4 October 2018, Riga, Latvia; Pages 19-20. <http://www.diva-portal.org/smash/get/diva2:1297085/FULLTEXT01.pdf> Accessed April 10, 2022.

PigTrace Canada, <https://www.cpc-ccp.com/traceability> Accessed April 26, 2022.

PigTrace Canada <https://www.youtube.com/channel/UCl8Elvz-nsygp32PzlysNHw> Accessed April 16, 2022.

PigPass Australia, <https://pigpass.australianpork.com.au/faq> Accessed April 26, 2022.

PigPass Australia, [https://australianpork.com.au/sites/default/files/2021-06/NLISigStandardsFINAL\\_20170802.pdf](https://australianpork.com.au/sites/default/files/2021-06/NLISigStandardsFINAL_20170802.pdf) Accessed April 26, 2022.

# Acknowledgements

---

The US SHIP development project investigators and staff would like to thank the myriad of industry, state, and federal partners that have volunteered their time, subject matter expertise, and energies towards informing the development of a US SHIP customized to meet the needs of the 21<sup>st</sup> century US pork industry.

The engagement and contributions of the *more than 150 US pork industry participants* (e.g., producers, packers, veterinarians, nutritionists, VDLs / academia, and state and federal veterinary medical officials) from across the US that have participated in a technical working group, pilot project, research endeavor, or served in an advisory capacity have been exemplary.

As mentioned earlier, US SHIP is an industry, state, and federal partnership en-route to be a USDA Swine Health Program (modeled after NPIP's longstanding system of shared governance) that centers on certifying the health of US swine in accordance with well-defined program standards. Any project-based work involving research, new system development, collaborative forums, outreach, education, and advocacy for US SHIP related efforts are only possible through the support and self-evident synergies working in partnership with the national pork producer, packer, and swine veterinary organizations.

The collaboration and support provided by the National Pork Board, National Pork Producers Council, North American Meat Institute, United States Animal Health Association, Swine Health Information Center, and the American Association of Swine Veterinarians has been nothing short of tremendous and foundational towards moving this precedent setting endeavor forward.

Also, a special note of thanks to US SHIP Technical Committee Working Group Leaders that have facilitated the process of developing of the proposed updates to the Program Standards and the Resolutions to be discussed and considered further at the upcoming US SHIP HOD in September.

## **US SHIP Technical Committee Working Group Leaders:**

Biosecurity Chairperson: Montse Torremorell (University of Minnesota)  
Biosecurity Site Plans Working Group: Chris Rademacher (Iowa State University)  
Feed Biosafety: Jordan Gebhardt (Kansas State University)  
Transportation Sanitation: Rodger Main (Iowa State University)  
Live Animal Markets: Bret Marsh (State Veterinarian, IN)

Traceability Chairperson: James Lowe (University of Illinois)  
Traceability GAP Analysis: Giovanni Trevisan (Iowa State University)  
Pilot Project: Jim Lowe / Giovanni Trevisan

Sampling and Testing Chairpersons: Jeff Zimmerman (Iowa State University), Jerry Torrison (University of Minnesota), Jane Christopher-Hennings (South Dakota State University)