US Swine Health Improvement Plan (US SHIP)

House of Delegates Meeting (US SHIP HOD)

September 6 – 8, 2022

Doubletree by Hilton

Bloomington, MN

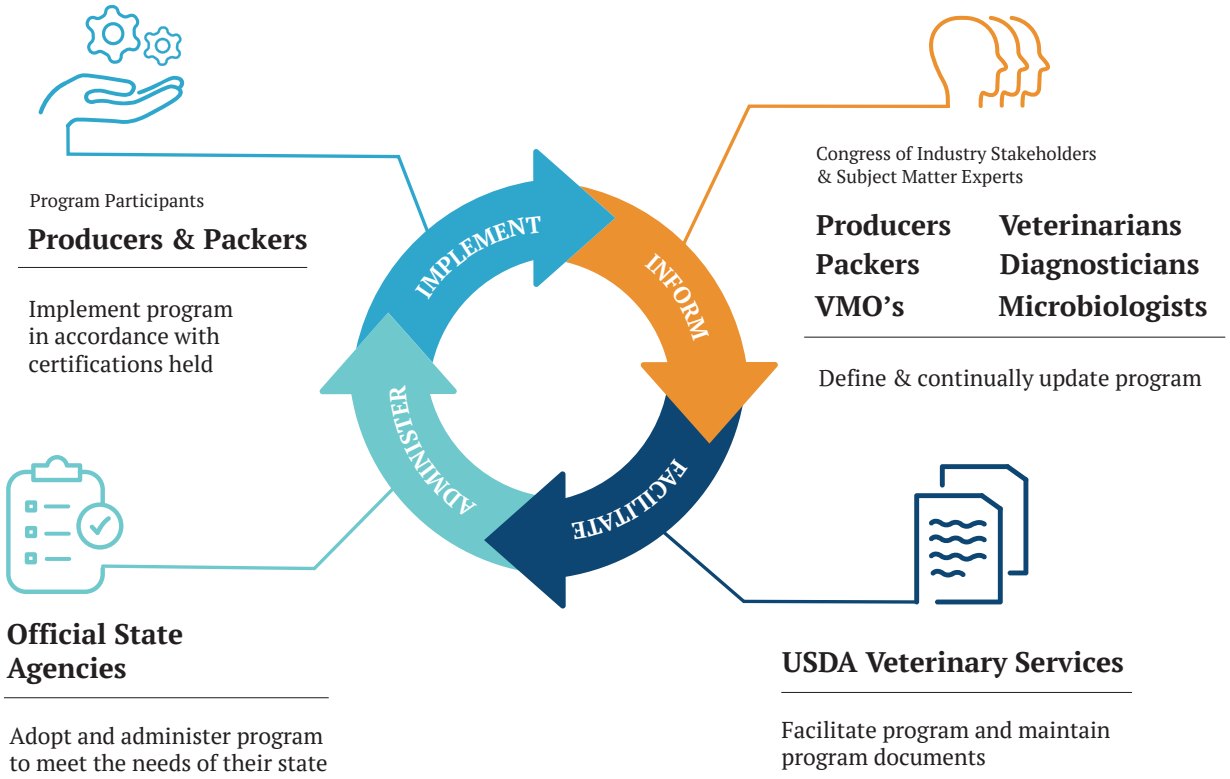
Conference Proceedings

Updated to reflect changes of HOD Meeting - Sept 15 2022

US Swine Health Improvement Plan

ASF-CSF Monitored Certification

"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

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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!

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 21st 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.

A special word of thanks to the National Pork Board for the provision of funding to off-set the costs to host (meals, convention hall meeting rooms, AV support) this 2nd US SHIP HOD meeting.

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

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: Giovani Trevisan (Iowa State University)
Pilot Project: Jim Lowe / Giovani Trevisan

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

Meeting Objectives

US SHIP House of Delegates Participant,

Thank you for attending the 2nd US SHIP House of Delegates (HOD) meeting that is being held 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
Phone: 515-294-8611
Website: 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:

- ☑ Premise Identification Number (PIN)
- ☑ Swine Owner Contact Information
- ☑ Premise Type (Boar Stud, Breeding Herd, Farrow-Feeder/Finish, Growing Pig, etc.)
- ☑ Site Location Information:
  - Latitude and Longitude
  - 911 Street Address, if one has been assigned
- ☑ Date of last usage of the site by swine owner (if applicable)
- ☑ Site Owner Contact Information
- ☑ Common Name of Site
- ☑ Expected Site Capacity (Number of Breeding Swine and/or Growing Pigs)
- ☑ Date of initial enrollment of the site in US SHIP, or date of first usage of the site by current swine owner

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:		
☑ Date of movement	☑ Origin State	☑ Origin PIN
☑ Destination State	☑ Destination PIN	☑ Head in movement
☑ 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:		
☑ Date of movement	☑ Origin State	☑ Origin PIN
☑ Destination State	☑ Destination PIN	☑ 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

☑ Permissioned 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)

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

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

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

ASF/CSF Status = Level 2,
US Positive, Operations Normalizing, and State or Region Negative (All US SHIP Testing is outside of Control Areas)

Production Site Type	Specimen Type(s)	I or A[1]	Frequency / Timing of Sampling	Sampling & Testing Requirements (Alternative Options)		
				Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
Boar Stud Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	2X per month	10	2	-
Breeding Herd 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	-
Growing Pig Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	10	2	2
Farrow to Feeder **Farrow to Finish**	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
Small Holding ≥ 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
Non-Commercial < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Quarterly	5	1	1

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

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

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)

Production Site Type	Specimen Type(s)	I or A[1]	Frequency / Timing of Sampling	Sampling & Testing Requirements (Alternative Options)		
				Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
Boar Stud Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	Weekly	10	2	-
Breeding Herd 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	-
Growing Pig 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
Farrow to Feeder Farrow to Finish	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
Small Holding ≥ 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
Non-Commercial < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	5	1	1

[1] 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.

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 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).

PROGRAM STANDARD NUMBER: 2022 - 1

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

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. Suppliers with enhanced post-processing biosafety measures in place[1,2]
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).

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

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.

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

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:

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

PROGRAM STANDARD NUMBER: 2022 - 3

SUBMITTED BY: US SHIP Sampling and Testing Technical Committee

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

STANDARD:

"In the absence of an introduction of ASF/CSF, there will be no additional ASF/CSF sampling and testing requirements of participants for the next twelve months 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. Further illustrated in "Update on USDA Expanding ASF-CSF Surveillance at NAHLN Labs" on page 69 of these proceedings.

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

ASF/CSF Status = Level 1, US Negative (Peace Time)

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

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

Additional note concerning USDA's active ASF/CSF surveillance of case-compatible submissions to veterinary diagnostic laboratories in the NAHLN:

Efforts will be made in the coming year to increase industry participant awareness and participation in this recently expanded means of active ASF/CSF surveillance.

Additionally, US SHIP Program Administrators have been in preliminary discussions with USDA Swine Health Program Staff concerning the potential for incorporating this real-time (ongoing) surveillance of case- compatible case submissions to VDL's as a principle component of US SHIP's Risk Level 1 (US Free) surveillance in the future.

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 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 (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).

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.

RESOLUTION NUMBER:	2022 - 6
SUBMITTED BY:	US SHIP General Conference Committee (US SHIP GCC)
SUBJECT MATTER:	Elected General Conference Committee & Governance
WHEREAS,	the US Swine Health Improvement Plan (US SHIP) was initiated as a two-year pilot project funded by the USDA and led by a team of swine interest veterinarians across four Midwestern universities, and is being administered through Iowa State University,
WHEREAS,	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,
WHEREAS,	NPIP (established in 1935) has a well-tested model of operations and shared system of governance that is built upon leveraging industry participant know-how and leadership in deriving practical standards, definitions, and policies that serve to safeguard and better poultry health and the competitiveness of the US poultry and egg industries,
WHEREAS,	NPIP's leadership includes a General Conference Committee (GCC) that consists of seven individuals (volunteers, US poultry and egg industry participants / subject matter experts) from across the US that are elected by the NPIP House of Delegates. The NPIP GCC is an officially recognized Federal Advisory Committee to the NPIP Program Administrative Staff (USDA APHIS employees) and the US Secretary of Agriculture on matters related to poultry health,
WHEREAS,	the US SHIP pilot project investigators appointed seven GCC members to serve during this current start-up phase of US SHIP. The appointed GCC members include two principal investigators from the initial USDA grant, three members representing industry, one state animal health official, and one USDA representative which have served US SHIP since its inception,
WHEREAS,	given the industry support and interest in US SHIP and further funding support from both the USDA and National Pork Board/Check-off, the US SHIP pilot is being extended two additional years to further develop and transition to a formal USDA program for certifying the health of US swine.

Now, therefore be it RESOLVED:

The US SHIP House of Delegates requests the commissioning of a working group to further develop and clarify plans for the governance of US SHIP. This working group is to include the current US SHIP GCC, one individual appointed by each of the national pork industry associations (i.e. NPPC, NAMI, AASV and the show pig industry), and six representatives of pork producing entities appointed by state pork associations with preference to producers.

This group's work will include:

1. Clearly defining the role and responsibilities of the elected US SHIP General Conference Committee and its membership,
2. Determining the formation of the GCC including the number of members and their representation,
3. Establishing the terms of service for a US SHIP GCC member,
4. Clarify the transition to formal Technical Advisory Committees and propose the core topics/disciplines to be addressed to advance the technical content of US SHIP,
5. Further clarify the working relationship of the US SHIP GCC with the US SHIP Technical Advisory Committees and the US SHIP staff (pilot staff FY 2023/24 and USDA staff beginning October 2024),
6. Initiating steps necessary to establish the US SHIP GCC as Federal Advisory Committee,
7. Solicit and put forth nominations of well-qualified candidates with an interest in serving in the first-slate of elected US SHIP GCC members. Nominations would be put forth and voted upon at the US SHIP HOD in 2023.
8. Serve as the US SHIP GCC that includes providing guidance and counsel to the current US SHIP Program Administration and associated US SHIP operations until elections are completed at the US SHIP HOD in 2023.

The outcomes of this working group's efforts will be shared and brought forward to the US SHIP HOD in 2023.

RESOLUTION NUMBER:	2022 - 7
SUBMITTED BY:	State of Indiana Delegation
SUBJECT MATTER:	Establishment of a sub-committee within the Sampling and Testing Committee to further evaluate peacetime surveillance opportunities and needs within the U.S. Swine Health Improvement Plan program.
WHEREAS,	U.S. 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,	Knowledge, recommendations and best practices are expected to evolve and improve over time, necessitating an organizational structure to facilitate recommendations for consideration by the U.S. SHIP House of Delegates,
WHEREAS,	U.S. SHIP aims to provide a means for demonstrating evidence of freedom of disease (outside foreign animal disease control areas) in support of ongoing interstate commerce and a pathway towards the resumption of international trade,
WHEREAS,	U.S. SHIP presents as a platform for incorporating broadly applicable active surveillance standards to support industry efforts for early detection of ASF/CSF.

Now, therefore be it RESOLVED:

The U.S. SHIP House of Delegates supports moving forward with efforts to determine the need for active surveillance within the program. The primary objectives of these efforts will be to further evaluate opportunities associated with the USDA-APHIS CSF/ASF case compatible submission program, explore a potential program standard where US SHIP enrolled sites will be required to include a premises identification number (PIN) on every lab submission, continue to evaluate opportunities to expand surveillance options, including oral fluids and others and explore options to initiate a pilot project to begin active surveillance. The sub-committee shall be producer-led with advisement by a practicing veterinarian, APHIS import/export staff, APHIS Swine Health Team, CEAH, state animal health official, the National Animal Health Laboratory Network, and APHIS-FADDL staff.

The sub-committee will provide an update with recommendations for implementation of active surveillance at the 2023 House of Delegates Meeting.

RESOLUTION NUMBER: 2022 - 8

SUBMITTED BY: US SHIP Working Group on Site Biosecurity

SUBJECT MATTER: Mitigating Risks of Direct Contact with Feral Swine

RESOLUTION:

To further define mitigation measures for US SHIP participating sites from feral swine.

The US SHIP House of Delegates requests the commissioning of a coordinated, standing committee to provide recommendations for consideration by the US SHIP House of Delegates in 2023.

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

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.

Specific Aims of US SHIP ASF-CSF Monitored Certification

1. Enhance all three aspects (prevention, response, & recovery) of trade impacting disease (TID) preparedness amongst participating producers, slaughter facilities, and states through proactively establishing an industry-informed and working system of operations and certification built upon well-defined program requirements for biosecurity, traceability, and disease surveillance.

2. Reduce the impact of recurring endemic diseases of high consequence through the sustainable advancement of sanitary standards and practices that mitigate disease spread into and between farms.

3. Provide US pork industry participants a first-hand experience in developing and participating in an "NPIP like" program customized to meet the needs of the 21st century US pork industry.

Biosecurity, traceability, and disease surveillance are each critical elements to trade impacting disease (TID) preparedness and are the cornerstones of this US SHIP ASF-CSF Certification Program.

While advancing practices that mitigate risks of disease introduction into the country is the top priority, proactively developing and implementing an industry-informed and functional system prior to an ASF-CSF incursion will also enable participants and states to readily scale up the necessary testing to demonstrate freedom of disease across specified supply chains, areas, regions, and market segments throughout a response and recovery phase.

The US SHIP ASF-CSF Monitored Certification Program aims to play a primary role in helping support the responsible movement of swine and continuity of business and trade outside of ASF-CSF control areas.

Implementing uniform and effective systems (across supply chains, states, & regions) for early detection and demonstrating evidence of freedom of disease are foundational elements needed to support ongoing interstate commerce and a pathway towards the resumption of international trade over the course of an extended response and recovery period.

Guiding Principles and Litmus Test Used in Developing US SHIP

Guiding Principles Being Used in Developing US SHIP:

1. Don't recreate the wheel
2. Simple (requirements for certification must be clear and concise)
3. Inclusive (broadly applicable across full spectrum of US pork industry)
4. Scalable
5. Flexible
6. Synergistic with and complementary to other FAD preparedness efforts
7. Founded on sound and practical science
8. Building a tangible/sustainable platform to Get Off the Ground
    - Structured to continually evolve and meet industry needs over the course of time

Litmus Test Being Used in Developing US SHIP Program Standards:

1. Does it represent a tangible improvement to the status quo of FAD preparedness?
2. Will a broad spectrum of participants (packers/producers) agree to it?
3. Is it or can it be done across the broad spectrum of US pork industry participants & states?
4. Does it provide a foundation that can be built upon, improved, and updated over time?

Importance of Broadly Applicable Standards and Participation

Developing US SHIP in such a way that encourages very large-scale participation across the full-spectrum of industry participants and states is absolutely critical to achieve the overarching objectives of this US SHIP pilot project endeavor (i.e., establishing a sustainable platform for safeguarding, certifying, and bettering the health of US swine and longer-term competitiveness of the US pork industry).

The US poultry & egg industries' NPIP has evolved over the course of the past 85 years in such a way that 100% of the Primary Breeders and greater than 99% of the Commercial Poultry (e.g., Meat-Type Chicken Slaughter Plants, Meat-Type Turkey Slaughter Plants, & Commercial Table Egg Layers) in the US participate in NPIP.

This critical mass of participation across all 50-states is unquestionably a significant contributing factor toward NPIP's longstanding and proven track-record of success.

Such levels of participation have been critical towards providing US Commercial Poultry operations in states and regions not affected by an AIV event of significance (i.e., HP-AIV or a lowly pathogenic AIV) an officially recognized mechanism for demonstrating freedom from disease. The H5/H7 Avian Influenza Monitored classification held by meat-type chicken and turkey slaughter plants, commercial table egg laying operations, and states has played a primary role in helping sustain export markets and interstate commerce from unaffected regions during times of an AIV outbreak of significance affecting commercial poultry in the US.

Obtaining a critical mass of participation in US SHIP is a foundational element necessary towards being able to make tangible progress towards protecting, improving, and being able to represent the health status of all domestic pig production operations across supply chains, areas, states, and regions.

The US SHIP Technical Committees have worked diligently in effort to draft program standards for the US SHIP HOD consideration that are relevant, palatable, practical, and represent a tangible step forward across the tremendous diversity of operations that make up the greater US pork industry.

2017 Census of Agriculture - farms with swine

FARM INVENTORY	TOTAL FARMS	TOTAL PIGS
< 1000 pigs	56,099. (84.4%)	2,044,661. (2.8%)
1,000 to 4,999 pigs	6,740. (10.1%)	17,635,061. (24.4%)
> 5,000 pigs	3,600. (5.4%)	52,701,285. (72.8%)
TOTAL	**66,439**	**72,381,007**

The diversity amongst the various types of pork producing operations (e.g., large, small, integrated, independent, indoor, outdoor, breeding stock, grow-finish, commercial and non-commercial) should not be underestimated. While great differences exist in the degree of sophistication, capital investment in biosecurity related infrastructure, management practices, and total numbers of pigs housed at the various different types of pork production operations, each of the various segments of the US pork industry play a highly important role when it comes to being able to represent the health status of a supply chain to a given slaughter facility or all the pigs across a geographical area, state, region, or country.

Unlike many endemic diseases, where the primary area of emphasis and economic return come from controlling or eliminating pathogens at the level of the breeding herds on a farm by farm basis, trade impacting diseases need to be kept out of and/or eliminated from the entirety of the pork supply chain across areas, states, regions, and country. Thus, a very different situation, and again, requiring a critical mass (if not universal) of participation and unified effort involving and relevant to all segments of the US pork industry.

It should be recognized that Compartmentalization (i.e., demonstrating evidence of freedom of disease from specific sites or operations within an affected region) is distinct from, and far more difficult than, Regionalization. Regionalization involves demonstrating evidence of freedom of disease in unaffected or no longer affected, areas, states, or regions.

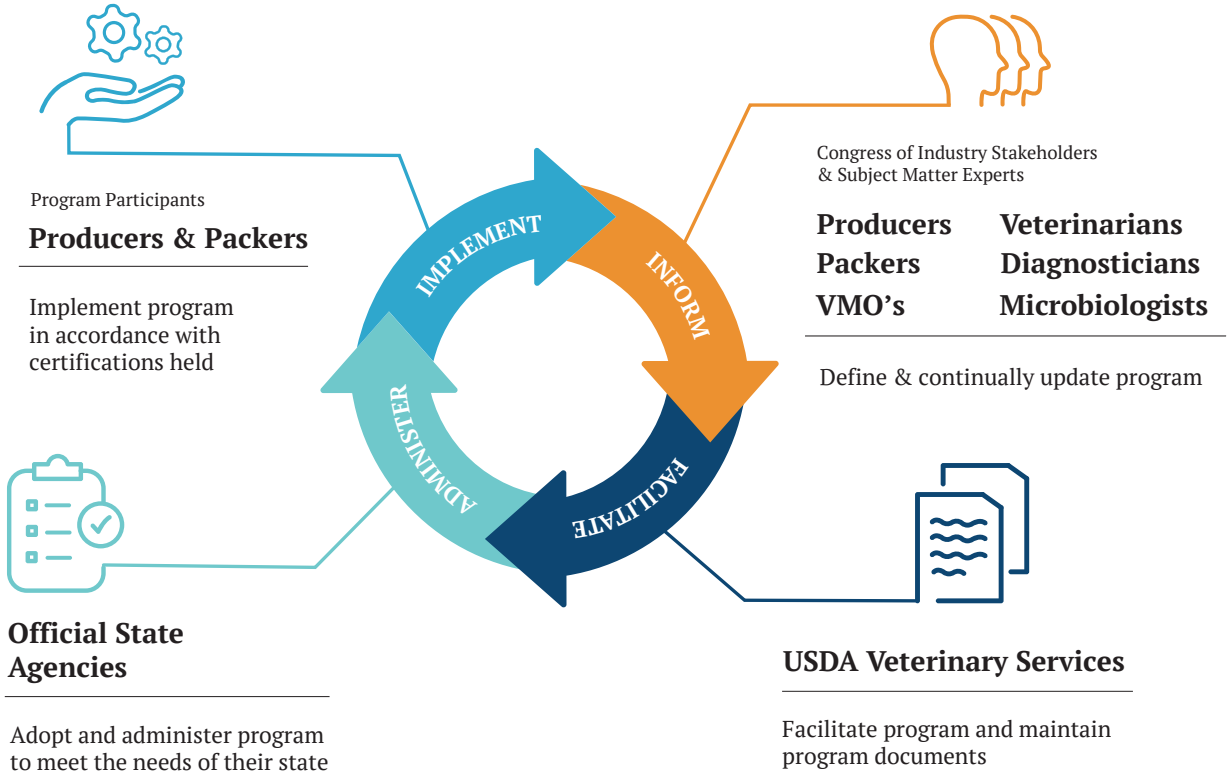
While pursuing efforts to establish a system for conferring officially recognized “Compartments” may be of interest to some portion of US pork industry participants, such an endeavor is far outside the scope of this US SHIP ASF-CSF Monitored Certification. The extensive rigor and bar for achieving such programmatic standards exceeds the scope and resources of this current ASF-CSF Monitored certification.

Establishing a fully functional US SHIP could provide the foundation for developing an “ASF-CSF Free Compartment”-based certification to be considered and/or pursued by a select subset of US pork industry participants in the future (i.e., similar to the Avian Influenza Free Compartment certification established in 2018 by NPIP for US Primary Breeder Operations). However, the organization, resources, and bar to achieve and maintain such a compartmentalization standard should not be underestimated.

US SHIP pathway to a USDA Swine Health Program

A depiction of US SHIP's working system of operations that are in the process of being developed and patterned after NPIP are illustrated in Figure 1 below. US SHIP is being modeled after NPIP's long-standing and well-tested model for bringing industry, state, and federal partners together to safeguard and better animal health and the competitiveness of US animal agriculture. The US SHIP investigators and staff responsible for developing this program are working in partnership with USDA Veterinary Services Swine Health Staff and serving as the US SHIP Program Administration during the current pilot/start-up phase of this endeavor.

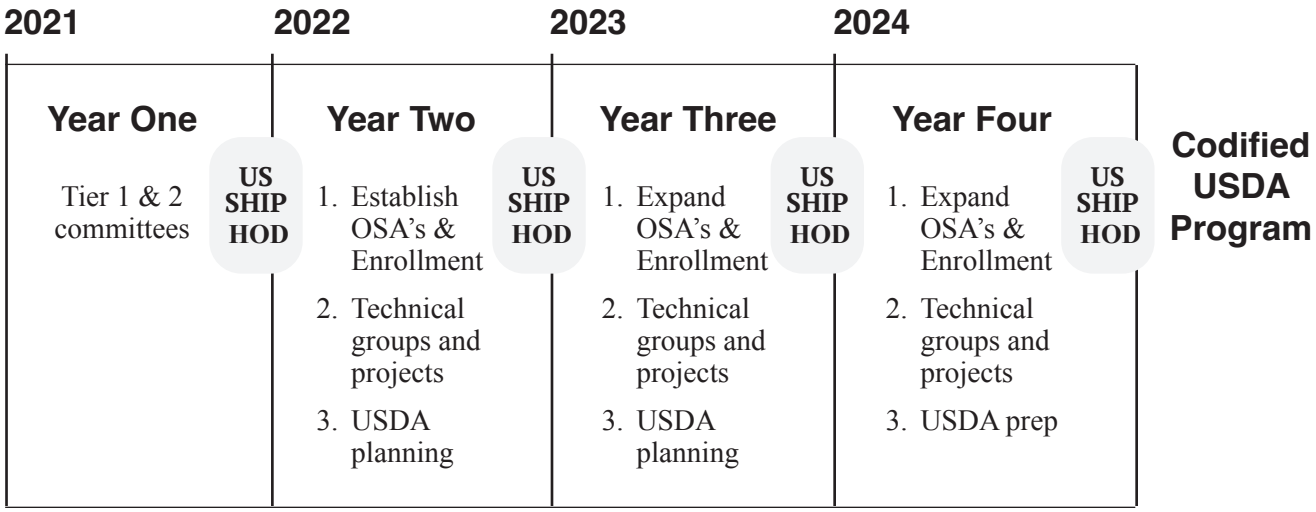
Figure 1. US SHIP's operational structure is being patterned after NPIP.



There has been an ever-increasing level of understanding, interest, and support for the establishment of a US SHIP over the course of the pilot project period. 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 came 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" lead by board members of the National Pork Board and National Pork Producers Council in Spring 2022 identified ***"expediting the development of US SHIP into a permanent USDA program"*** as one of the ***key industry priorities*** to be pursued.

With such growing interest and support, USDA Swine Health Staff and US SHIP Program Administration have been working collectively to ***map out a 4-year plan (2021 – 2024) for ramping this US SHIP pilot project to an official USDA APHIS Swine Health Program*** **(Figure 2)**.

Figure 2. Proposed timeline for ramping US SHIP to a USDA Swine Heath Program.



Developing US SHIP into a USDA APHIS Swine Health Program is essential for establishing credibility and recognition across states and ultimately US trading partners. NPIP's tripartite partnership (industry, state, and federal) and democratic approach used in the decision making process has a well-established record for delivering workable animal health assurance solutions for the US poultry and egg industries. Much of the burden and responsibility for bringing forth, debating, and directly addressing species- and industry-specific animal health issues of industry-wide significance are deferred from the federal and state veterinary medical officials and associated agencies working in isolation, to NPIP's formal congress of industry stakeholders and subject matter experts. This approach lends itself towards a sense of shared ownership in NPIP's officially recognized standards, definitions, policies, and health status classifications recognized across participants, participating states, USDA, and international trading partners.

Upon codification of US SHIP, similar to NPIP, the US SHIP Program Administration responsibilities are to be transitioned to a small team of swine interest USDA employees (i.e., US SHIP Program Administrative Staff). It is envisioned that the US SHIP Program Administration office will be located in central Iowa. The Ames / Des Moines region is in close proximity to the center of our nation's pork production and entities of national significance to US animal health and the US pork industry (i.e., USDA's National Centers for Animal Health, National Pork Board, National Pork Producers Council, America Association of Swine Veterinarians, and Iowa State University).

The NPIP national headquarters and its five USDA APHIS employees are located in Conyers, Georgia. Locating and operating NPIP's small national administrative office in a poultry centric region of the country is an issue of importance to US poultry and egg industry stakeholders. Many international visitors and trading partners visit Georgia (e.g., NPIP national headquarters, Georgia Poultry Lab Network, Poultry Diagnostic and Research Center at the University of Georgia,

USDA Southeast Poultry Research Laboratory, and a myriad of commercial poultry operations) to learn and better appreciate the poultry health control programs and poultry and egg industries in the US. The NPIP Senior Coordinator (the senior NPIP administrator) provides leadership for NPIP activities at the national level. The NPIP General Conference Committee consists of elected individuals (volunteers, one at-large member and six regional representatives) who provide oversight and industry representation in the NPIP administration.

The initial slate of elected US SHIP General Conference Committee members are envisioned to be elected at the 2023 US SHIP HOD. This timing will allow for these individuals to be fully on-boarded and providing their input throughout the transition of US SHIP to an officially recognized USDA Swine Health Program in 2024.

US SHIP HOD meetings are anticipated to transition to an every other year rotation (Biennial Congress) upon transitioning to a USDA Swine Health Program in 2024.

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 eartags, 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?
Canada 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).
Brazil 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.
Denmark 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.
Australia 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?
Canada 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
Brazil 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	Oficial 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?
Denmark 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
Australia 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?
Canada 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.
Brazil 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)
Denmark 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)
Australia 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
Canada 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.	**Within seven days of shipping or receipt of pigs**, deadstock, or parts of deadstock.
Brazil 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 **prior to moving** 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.
Denmark 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 **within seven days.**
Australia 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.	**Prior to moving** 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?
Canada 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.
Brazil 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.
Denmark 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
Australia 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.

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Traceability Pilot: Capturing Inter-Premises Movements in a Supply Chain to a Packing Plant

Giovani Trevisan (Iowa State University) and James Lowe (University of Illinois)

Introduction: At the 2021 US SHIP house of delegates, Resolution 2021 – 2 entitled *"Pilot demonstration of a more comprehensive approach and system of traceability in the US pork industry (i.e., similar to PigTRACE™ Canada)"* was approved.

To address the resolution 2021 – 2, a focused demonstration project was conducted to elucidate the potential of and barriers to a comprehensive system of traceability for US SHIP participants. The demonstration project involved portions of a single pork supply chain consisting of eight swine producers and a single harvest plant. The objective of the project was to capture, verify, and summarize all inter-premises movements of live swine into and out of each participating premises through slaughter within 7 days of movement.

The demonstration project captured movement records data from approximately 40% of the expected supply into a single harvest plant. The movements originated from producers of varying size (154 – 115,332 pigs moved to the plant), degree of integration (purchasing weaned pigs to full integration including genetic multiplication), and record keeping systems (spread sheet, commercial software, proprietary software).

Approach: Movement data was captured electronically through a common tool, AgVIEW (National Pork Board, DesMoines, IA, https://www.agview.com/). Data was entered into AgVIEW using multiple, producer specific, approaches. These approaches included direct data entry, data uploads of data exported from other record systems (CSV or Excel files), or through a direct electronic connection to production record software (e.g., Metafarms (Metafarms, https://www.metafarms.com/). For each movement, the data required fields to demonstrate a system of traceability successfully per 2021 US SHIP HOD approved standards, were: Date of movement, Origin PIN, Origin state, Destination PIN, Destination State, Number of head or semen units in movement, Animal type in movement (breeder, feeder, semen, slaughter)

To build a historical record and validate data entry/transfer protocols historical movement data from October 2021 through April 2022 was captured in AgVIEW starting in February 2022. Beginning in April 2022, contemporary animal movement data was captured weekly in AgVIEW from all demonstration project participants. For a 60-day period starting in May, coinciding with increased confidence in the robustness of the data movement process, movement data was exported from AgVIEW on a weekly basis. The traceability working group used the exported data for analysis of both animal movements but more importantly to assess the completeness, timing, and accuracy of the data capture process to inform US SHIP participants on the feasibility and practicality of a comprehensive traceability program.

Outcomes: During the demonstration period (May and June of 2022), a total of 8,989 (~148/day) unique animal movements, consisting of 2,920,937 (~48,000/day) animals were recorded. These

movements involved 17 US states. The movements to harvest represented 41.1% of slaughtered animals at the participant packing plant during the demonstration period.

Timing of Data Capture: On average, the lag between the animal movement date and it's registration in the central repository was 12.52(±11.24) days in May and 7.92(±6.17) in June.

Completeness of Data: Of the recorded animal movements, 36.4% (3,276 of 8,989) had all required fields recorded, i.e., date of movement, origin PIN, origin state, destination PIN, destination State, number of head or semen units, and animal type in movement. Across the remaining 63.56% (5,713 of 8,989) of the registered movements 35.0% (3,149 of 8,989) were without a destination PIN, 21.54% (1,936 of 8,989) without origin state, 11.4% (1,024 of 8,989) without the origin PIN, 4.5% 400 of 8,989) without destination State. For movements with movement data from both the source and the destination site (in this project only swine delivered to the packing plant), 86.7% of the movements were mutually registered, having the shipment recorded by the producer and the receiving recorded by the packing plant.

Movement traceability: Software code was developed in Python to demonstrate the viability of traceback individual loads to their origin. With complete records where both origin and destination PIN were present, it is possible with the existing data structure to traceback the sites individual loads had live animal contact with during their lifetime. Where movement records do not have PIN data for both source and destination, traceback is not possible resulting in unknown live animal contacts prior to harvest.

Future Impact: There is value and a need for a more robust and comprehensive traceability system within the US pork industry. In the event of an animal health emergency, both in the immediate emergency and during the period before elimination, the ability to track and trace animal movements across premises is 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. The pilot project demonstrated that traceability is possible under current industry conditions and at the speed of commerce. Improvements in data capture, aggregation and analysis are necessary to conduct traceability at an industry level scale. In addition, the project demonstrated the need for data capture to be in place before an animal health emergency because the complexities of capturing and aggregating data require significant planning and testing prior to implementation with each producer.

KEY LESSONS LEARNED:

- It is feasible to generate, aggregate, and provide permissioned sharing of intra and inter-state animal movements in near real-time;
- Pilot project was a significant learning experience for all parties involved;
- Understanding the system-specific status quo and what is needed to efficiently collect animal movement data is fundamental for future success;
- Producers need simple, user-friendly, and sustainable means (options) for submitting quality assured inter-premises swine movement data.
- Producers need confidence that the inter-premises animal movement data submitted to a secured database application of choice can readily be accessed by the appropriate Veterinary Medical Officials in time of need.
- A successful animal traceability system will require clear standards for permissioned sharing animal movement data;

- Further development and adoption of built for purpose database applications are needed to establish truly scalable, broadly applicable, real-time inter-premises swine movement data aggregation capabilities in the US.
- Establishing such real-time data capture and aggregation across a breadth of different producers and packers is not something that can be readily spun-up in a time of crises. Needs to be an ongoing activity, with clearly defined requirements and triggers for sharing with the appropriate veterinary medical authorities.

*Special note of thanks to the producers, packer, and National Pork Board for their collaboration, contributions made, and sponsorship of this pilot project.

Sampling and Testing Technical Summary

Part A. Overview

1. The U.S. Swine Health Improvement Plan (US SHIP) is a joint industry, state, and federal partnership designed to protect U.S. pork exports and enhance the industry's capacity to prevent, respond to, and recover from trade-impacting diseases by implementing uniform industry standards and procedures for sanitation, traceability, and sampling/testing.
2. African swine fever virus (ASFV) and classical swine fever virus (CSFV) are threats to U.S. pork producers because they can move quickly and with devastating economic consequences, e.g., the detection of ASFV in the U.S. is expected to result in an immediate 40-50% reduction in live hog prices (Carriquiry et al., 2020).

OVERVIEW - KEY UPDATES

- Since January 2020, ASFV has been reported in Africa, the Americas, Asia, Europe, and Oceania (38 countries). Losses (deaths and culls) include > 1,843,000 domestic pigs. *(OIE African Swine Fever Situation Report 12, May 18, 2022)*
- Detection of ASFV genotype I reported in China for the first time *(Sun et al., 2021)*.
- CSFV is endemic to parts of Central and South America, Europe, and Asia and Africa. https://www.woah.org/en/disease/classical-swine-fever/
- The global spread of ASFV (particularly genotype II) continues. Likewise, CSFV continues to circulate in large parts of the world. ASFV and CSFV present a risk to U.S. swine producers.

Part B. Scope and purpose of sampling and testing

1. ASF-CSF Monitored sampling and testing requirements complement existing systems of ASFV-CSFV surveillance in the U.S outside of Control Areas.
   a. ASF-CSF Monitored certification is based on sample collection on production sites and testing performed in National Animal Health Laboratory Network (NAHLN) laboratories. Active surveillance on production sites was identified as an optimal ASFV detection strategy (Guinat et al., 2017).
      i. A production site is a geographically definable area that includes pork production facilities and ancillary structures under common ownership or management systems and the surrounding space within a 100-foot perimeter (see US SHIP definitions).
      ii. The National Animal Health Laboratory Network (NAHLN) is a system of Federal, State, and university-associated animal health laboratories within the U.S.
   b. ASF-CSF Monitored sampling and testing requirements are not designed to establish an individual production site as free of ASFV or CSFV via a single point in time sampling event. However, when statistically analyzed in the aggregate, test results from ASF-CSF Monitored production sites can support the ASFV- and CSFV-free status of production sites within a defined geographic region (Hu et al., 2020).
2. In the event of the introduction of ASFV or CSFV into the U.S., the existence of uniform and effective systems for early detection and documenting freedom from disease will expedite interstate and international commerce outside of Control Areas over the course of the response and recovery period.

Part C. Basis of sampling and testing

1. African swine fever virus (ASFV)
   a. ASFV is a genetically diverse DNA virus classified into 24 genotypes on the basis of partial p72 gene nucleotide sequencing (Sánchez-Vizcaíno et al., 2019a,b). Since 2007, genotype II has spread widely in Africa, Asia, and Europe and presents an on-going risk to regions currently free of the virus.
   b. In the pig, ASFV initially replicates in monocytes and macrophages of the lymph nodes nearest the point of virus entry. Thereafter, ASFV spreads through blood and/or lymphatic systems to secondary sites of replication, e.g., lymph nodes, bone marrow, spleen, lung, liver, kidney, and tonsil (Fernández et al., 2007; Howey et al., 2013; Sánchez-Vizcaíno et al., 2019a,b).
   c. The incubation period (time from exposure to clinical disease) ranges from 3 to 19 days, depending on the isolate and route of exposure (Sánchez-Vizcaíno et al., 2019a,b). Pig-to-pig ASFV transmission may be slow in newly-infected herds and ASFV mortalities may be minimal and pass unnoticed (Guinat et al., 2017; Schulz et al., 2019).
   d. ASFV cannot be diagnosed on the basis of clinical signs. Laboratory testing is required to differentiate ASFV from pathogens that may produce similar clinical signs, e.g., CSFV, erysipelas, salmonellosis, pseudorabies, bacterial septicemia, PRRSV, and others (Sánchez-Vizcaíno et al., 2019a,b; Schulz et al., 2019; USDA APHIS, 2019).

ASFV - KEY UPDATES

- ASF cannot be ruled out on the basis of clinical or pathognomonic evaluations; this should be highlighted in any new guidelines (EFSA, 2021b).
- ASFV Georgia 2007 spread model -- 95% prediction intervals for specific clinical parameters expected in ASFV-infected herds (EFSA, 2021b):

TIMELINE OF INFECTION Days post introduction (DPI)	***Population size***		
	50	200	1000
Predicted no. dead pigs DPI 6 - 13	0 - 3	0 - 4	0 - 4
Predicted prevalence (%) at 13 DPI	0 - 27%	0 - 8%	0 - 1.4%
Predicted no. dead pigs DPI 16 - 23	0 - 17	0 - 21	0 - 21
Predicted prevalence (%) at 23 DPI	0 - 88%	1 - 46%	0.3 - 12%
Predicted time to 10% prevalence (days)	9 - 22	15 - 38	23 - 45

"Although the average number of dead ASF infected pigs is above 5 in all scenarios, it must be noticed that it is also possible that no dead pigs may be found in the herd (independently of herd size), at 23 days post-infection and even for scenarios where a high virulence of the strain is assumed." EFSA, 2021b, p. 17.

2. Classical swine fever virus (CSFV)
   a. CSFV is an antigenically and genetically diverse RNA virus classified into 3 major genetic groups (Ganges et al., 2020; Kirkland et al., 2019). Eradicated from the U.S. in 1978, CSFV continues to circle widely in much of the world (Blome et al., 2017).

b. Typically, the primary site of CSFV replication is the tonsils. Thereafter, the virus spreads to regional lymph nodes and secondary sites of replication via the blood and lymph circulatory systems (Blome et al., 2017; Kirkland et al., 2019).
c. The incubation period (time from exposure to clinical disease) ranges from 4 to 10 days, but less virulent strains may not induce clinically apparent disease for 4 - 8 weeks (Blome et al., 2017; Kirkland et al., 2019). Adult animals are generally less severely affected than young animals (Drew and Pasick, 2019).
d. CSFV cannot be diagnosed on the basis of clinical signs. Laboratory testing is required to differentiate CSFV from pathogens that may produce similar clinical signs, e.g., ASFV, erysipelas, salmonellosis, pseudorabies, bacterial septicemia, PRRSV, and others (Kirkland et al., 2019; USDA APHIS, 2013).

CSFV - KEY UPDATES

- CSFV spread model -- 95% prediction intervals for specific clinical parameters expected in CSFV-infected herds (EFSA, 2021a):

TIMELINE OF INFECTION **Days post introduction (DPI)**	***Population size***		
	50	200	1000
Predicted no. dead pigs DPI 7 - 14	0 - 6	0 - 12	0 - 22
Predicted time to 10% fever prevalence (days)	7 - 41	9 - 52	12 - 59
Predicted no. dead pigs DPI 17 - 24	0 - 8	0 - 23	0 - 105
Predicted time to 10% seroprevalence (days)	16 - 56	19 - 65	22 - 71

3. Timeline for appearance of nucleic acid and antibody in antemortem diagnostic specimens
   a. African swine fever virus
      i. ASFV appears in blood (viremia) 1 to 8 days post exposure. Depending on the assay, detectable levels of ASFV-specific antibody appear in blood and oral fluids 7 to 12 days post exposure (Gallardo et al., 2019; Giménez-Lirola et al., 2016; Sánchez-Vizcaíno et al., 2019a,b; Zhao et al., 2019).
      ii. ASFV DNA may be present in oronasal samples, i.e., oral swabs, oropharyngeal swabs, tonsil scraping samples, oral fluids, or nasal swabs 2 to 14 days post infection (de Carvalho Ferreira et al., 2012; Fernández et al., 2007; Flannery et al., 2020; Grau et al., 2015; Guinat et al., 2014; Howey et al., 2013; Pietschmann et al., 2015).
   b. Classical swine fever virus
      i. CSFV appears in blood (viremia) 2 to 14 days post exposure and is transient. Depending on the assay, detectable levels of CSFV-specific antibody appear in blood and oral fluids 8 to 21 days post exposure (Ganges et al., 2020; Kirkland et al., 2019; Panyasing et al., 2018a,b; Popescu et al., 2019).
      ii. CSFV RNA may be detectable in oronasal samples, e.g., oral swabs, oropharyngeal swabs, tonsil scraping samples, oral fluids, or nasal swabs 2 to 14 days post infection (Dietze et al., 2017; Fukai et al., 2020; Grau et al., 2015; Huang et al., 2017, 2020; Panyasing et al., 2018; Petrini et al., 2017; Popescu et al., 2019; Weesendorp et al., 2009)

4. Antemortem diagnostic specimens for *ASF-CSF Monitored* certification
   a. Swab samples. Use flocked or spun head synthetic or semi-synthetic swabs (polyester, rayon, nylon). Commercial virus transport media, phosphate buffered saline (PBS), or physiological (normal) saline may be used. Tubes should have a capacity of at least 5 milliliters and have a secure cap.
      i. Oral swabs for virus detection. Place the swab between the cheeks and teeth and gently pass the swab forward and backward several times, allowing the swab to absorb fluid in the cheek pouch. Swirl the swab vigorously in a tube containing 5 milliliters of transport medium, squeeze excess liquid from the swab while inside the tube, and then dispose of the swab in a biosecure manner. POOL SWABS SAMPLES FROM UP TO 5 ANIMALS. Label the tube with barn, pen, and animal ID (if available). Chill (4°C) on ice or under refrigeration.
      ii. Nasal swabs for virus detection. Moisten the swab prior to use and then swab each naris. Swirl the swab vigorously in a tube containing 5 milliliters of transport medium, squeeze excess liquid from the swab while inside the tube, and then dispose of the swab in a biosecure manner. POOL SWABS SAMPLES FROM UP TO 5 ANIMALS. Label the tube with barn, pen, and animal ID (if available). Chill (4°C) on ice or under refrigeration.
      iii. Blood swabs for virus detection (Carlson et al., 2018; Petrov et al., 2014). Puncture an ear vein, saphenous vein, or the medial caudal vein at the base of the tail with a sterile needle or lancet. Saturate the swab with the blood that pools on the skin. Swirl the swab vigorously in a tube containing 5 milliliters of transport medium, squeeze excess liquid from the swab while inside the tube, and then dispose of the swab in a biosecure manner.
   b. Oral fluids for antibody or virus detection. Suspend a length of cotton rope in the pen for ~30 minutes. To recover the sample, remove the rope, place the wet portion of the rope inside a plastic bag, and extract the oral fluid (by hand or wringer). Thereafter, decant the sample into a tube, label the tube with barn, pen, and animal ID (if appropriate), and chill (4°C) on ice or under refrigeration. DO NOT POOL ORAL FLUIDS.

SPECIMENS - KEY UPDATES

- The antemortem (live pig) specimens selected for ASFV-CSFV Monitored Certification are supported by the literature.

- ORAL SPECIMENS

  ASFV detected in oral swabs from contact pigs earlier than in blood, independently of ASFV virulence (Gallardo et al., 2021).

  Pen-based oral fluid samples could supplement traditional samples for rapid ASFV detection (Goonewardene et al., 2021).

  Oral fluids are compatible with ASFV surveillance in large pig farms (Lee et al., 2021).

- ENVIRONMENTAL SAMPLES

  Environmental sampling used in avian influenza surveillance for over 50 years (reviewed by Hood et al., 2021).

  Viral DNA detected in environmental swab samples from ASFV-contaminated facilities (Kosowska et al., 2021). Note that standard (optimized) protocols for environmental sampling have not been established for any viral pathogens of swine.

Part D. Sampling requirements

1. Samples are collected at the production site and submitted to the testing laboratory under the guidance and direction of a Category II Accredited veterinarian.
2. Sampling requirements (specimen type, number of samples, sampling frequency) for ASF-CSF Monitored Certification depend on farm-type and the ASFV and CSFV status of the U.S., State, or Region (see Tables 1-3).
3. Shipment of samples for ASF-CSF Monitored certification
   a. Each tube should be clearly identified with sufficient information so as to allow traceback to the site, barn, pen, and animal (if appropriate) from which the sample was collected.
   b. Submission information provided with the testing request must include the complete address and premises identification number (PIN) for the production site from which the samples were collected.
   c. Package samples for shipping in compliance with requirements for transport of biological diagnostic materials, e.g., approved package liners and exterior labels. Protect tubes so as to avoid breakage. If available, use insulated containers and enclose sufficient ice packs to preserve sample quality. In severe cold weather, take precautions to prevent freezing. Place samples in sealed plastic bags to prevent leakage. Pack with absorbent materials to soak up spills should they occur. Refer to published federal guidelines and regulations for details regarding packaging, labeling, and interstate shipment of infectious agents (Title 42 CFR Part 72; Title 49 CRF Part 173.386-388).
   d. Choose a method of transportation that will ensure timely delivery to the laboratory.

SAMPLING - KEY UPDATES

- Targeted sampling (not random sampling) is recommended for both ASFV and CSFV in recent key publications (Lamberga et al., 2022; EFSA, 2021a,b). Consistent with this recommendation, US SHIP samples are collected from sick or poor-doing pigs ("targeted sampling") and not random sampling.
- "Regardless of the virulence of the ASFV strain in question (i.e., for either highly virulent strains as those currently circulating or strains of lower virulence), sampling of dead pigs and pigs with clinical signs would lead to an earlier detection." EFSA, 2021b.

Part E. Testing and reporting

1. Testing of samples for ASF-CSF Monitored certification
   a. Screening tests in the ASF-CSF Monitored certification program must be performed in NAHLN laboratories certified to conduct ASF-CSF testing. Test methods (assays) used must be equivalent or comparable to USDA NAHLN ASF-CSF approved test methods (assays), 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, and approved by the US SHIP Sampling and Testing Technical Committee.
   b. ASFV and CSFV 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.
   c. Consistent with current protocols, samples with non-negative test results will be forwarded to the USDA FADDL for additional (confirmatory) testing. Simultaneously, the testing laboratory is responsible for contacting the appropriate State and Federal animal health officials. The initiation of a Foreign Animal Disease Investigation, reporting of confirmed

positive ASF-CSF test results, and responding to detection is the responsibility of State and Federal Animal Health Officials.

TESTING - KEY UPDATES

- With > 80 refereed publications on ASFV or CSFV testing and test development from 2020 to the present, this is an active area of research (research publication PDFs available upon request). These publications are broadly divided into reports on nucleic acid detection, antibody detection, and point-of-care tests (POCT).

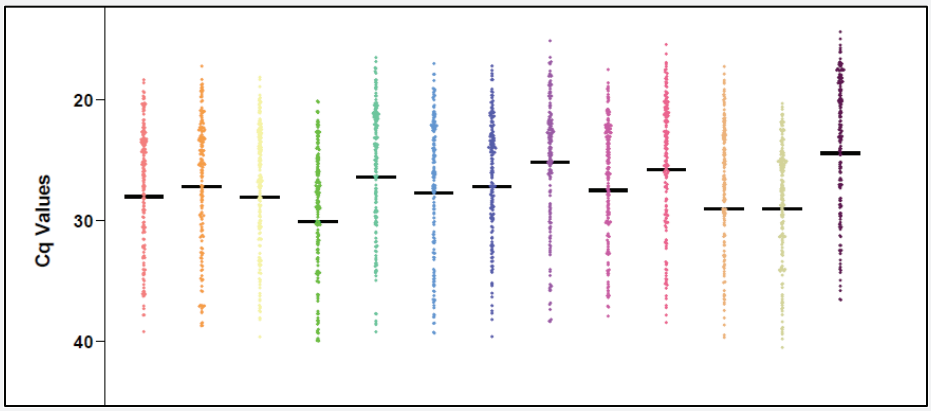
  Few of the research assays described in refereed publications will progress into commercial production.

  Antibody detection (recommended by OIE for ASFV surveillance) should be of interest because of the potential to reduce surveillance costs.

  Regarding point-of-care tests (POCT), Hobbs et al. 2020 (Transbound Emerg Dis 68:1835-1849) state that *"A lack of mandated test validation regulations for veterinary POCTs has allowed tests of varying quality to enter the market. The use of substandard, improperly validated, or unsuitable POCTs ... can have far-reaching negative impacts on disease control."*

- Schoder et al. (2020) compared the diagnostic sensitivity and specificity of 7 commercial ASFV PCRs -- [Virotype ASFV 2.0 PCR kit (Indical), Adiavet ASFV Fast Time (Adiagen), Bio-T kit ASFV (Biosellal), VetMax ASFV Detection kit (Thermofisher), RealPCR ASFV DNA Test (IDEXX), VetAlert ASF PCR Test Kit (Tetracore), ID Gene™ African Swine Fever Duplex (ID vet)]. The authors concluded, *"The ASFV real-time PCR reagents, evaluated during this study, have proven to be suitable for diagnostic laboratories working on ASFV detection."*

- Pikalo et al. (2022) compared 12 commercial PCR kits to an OIE-recommended method and concluded, *"all tests were fit for purpose."*



Distribution of Cqs (n = 207 samples) among 13 assays. The horizontal line in each plot represents the mean Cq (Figure from Pikalo et al., 2022).

These studies suggest that - in the event of an emergency - commercial kits could assist in meeting the demand for rapidly testing large numbers of samples for ASFV.

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

Note: This table illustrates sampling and testing requirements (ASF/CSF Level 1, US Negative) with the proposed update to the current program standards to be considered at the 2022 US SHIP HOD, that simply removes the words "Initial 12-month Research Period" from the current / existing program requirements.

ASF/CSF Status = Level 1, US Negative (Peace Time)

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

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

Additional note concerning USDA's active ASF/CSF surveillance of case-compatible submissions to veterinary diagnostic laboratories in the NAHLN:

Efforts will be made in the coming year to increase industry participant awareness and participation in this recently expanded means of active ASF/CSF surveillance.

Additionally, US SHIP Program Administrators have been in preliminary discussions with USDA Swine Health Program Staff concerning the potential for incorporating this real-time (ongoing) surveillance of case- compatible case submissions to VDL's as a principle component of US SHIP's Risk Level 1 (US Free) surveillance in the future.

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

ASF/CSF Status = Level 2,
US Positive, Operations Normalizing, and State or Region Negative (All US SHIP Testing is outside of Control Areas)

Production Site Type	Specimen Type(s)	I or A[1]	Frequency / Timing of Sampling	Sampling & Testing Requirements (Alternative Options)		
				Option 1 Individual Only		Option 2 Aggregate Only (Group or Pen)
				# of Individuals	# of Pools (Groups of up to 5)	# of Samples
Boar Stud Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	2X per month	10	2	-
Breeding Herd 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	-
Growing Pig Nursery, Grower, Finisher, Isolation	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	10	2	2
Farrow to Feeder **Farrow to Finish**	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
Small Holding ≥ 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
Non-Commercial < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Quarterly	5	1	1

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

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

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)

				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[1]**	**Frequency / Timing of Sampling**	**# of Individuals**	**# of Pools (Groups of up to 5)**	**# of Samples**
Boar Stud Mature Boars, Distributing Semen, ± On-Site Isolation	Oral Swab Blood Swab Oral Fluids	I I I	Weekly	10	2	-
Breeding Herd 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	-
Growing Pig 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
Farrow to Feeder **Farrow to Finish**	Requirements of Breeding Herd + Growing Pig In Numbers, and Growing Pig Only in Frequency					
Small Holding ≥ 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
Non-Commercial < 100 Breeder or Feeder Swine	Oral Swab Blood Swab Oral Fluids	I I A	Monthly	5	1	1

[1] I = Individual Sample, A = Aggregate (Group or Pen) Sample

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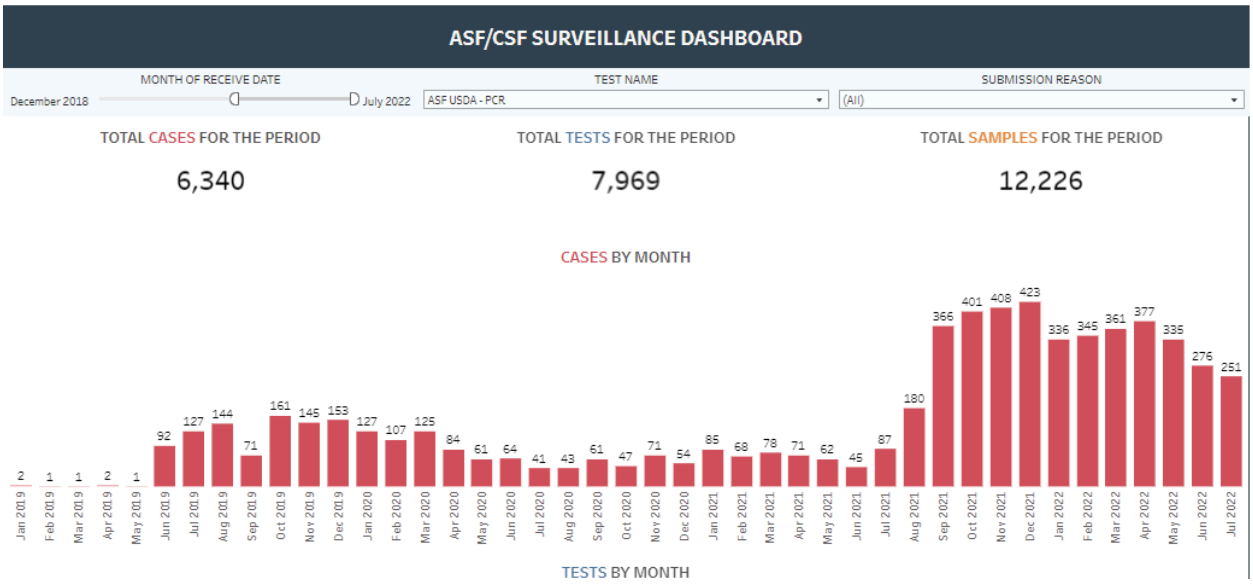
Update on USDA Expanding ASF/ CSF Surveillance at NAHLN Labs

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.

A total of 12 VDLs (NAHLN labs) across the country are approved to participate in this ASF/CSF active surveillance of case-compatible submissions. A total of 37 NAHLN labs across the US are currently approved and certified to conduct ASF/CSF testing in support of foreign animal disease investigations and response related testing needs.

As just one example of this stream of active ASF/CSF surveillance at a USDA NALHN Lab **(Figure 1)**, the graph below the number of case-compatible submissions (each case submission represents clinical specimens from a distinct premises or farm site) at the Iowa State University Veterinary Diagnostic Laboratory (ISU VDL).

Figure 1. USDA's active ASF/CSF surveillance of case-compatible submissions at ISU VDL



US SHIP Program Administrators have been in preliminary discussions with USDA Swine Health Program Staff concerning the potential for incorporating this real-time (ongoing) surveillance of case-compatible case submissions to USDA NAHLN labs as a principle component of US SHIP's Risk Level 1 (US Free) surveillance in the future.

Utilizing the PIN (Premises Identification Number) on the submissions to the VDL would provide for a user-friendly means for conferring such surveillance derived from US SHIP certified premises.

What Is Participatory Surveillance?

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Take-home bullet points:

- *Recent modeling and associated analyses have shown that collecting a few samples from many production sites across a region on a routine basis is extraordinarily sensitive, efficient, and effective. This "participatory surveillance" approach is used in US SHIP ASF-CSF surveillance: testing a modest number of samples from pigs or pens of pigs with animals of poor or sub-standard health ("targeted sampling") in production sites across supply chains, areas, and regions on a well-defined/recurring schedule.*
- *This surveillance design greatly minimizes the cost to individual producers and maximizes the benefit (early detection & evidence of freedom of disease) to the U.S. swine industry.*
- *Modeling based on the U.S. swine industry has shown that participatory surveillance is a practical and cost-effective approach for achieving early detection and demonstrating evidence of freedom of disease outside of foreign animal disease control areas.*
- *A critical mass of participation across supply chains, areas, and regions is essential.*

1. Early detection of trade-impacting diseases is crucial. If not detected early, pathogens spread and things spiral out of control. This happened in 2013 with porcine epidemic diarrhea virus (PEDV): it spread to 12 states within 8 weeks of its first detection in the U.S.[8,11]

   There are many similar stories:
   - In Brazil (1978), African swine fever virus (ASFV) reached Rio de Janeiro via a flight from Europe. Food waste from the flight was fed to pigs, the pigs became infected, the infection was mis-diagnosed, and ASFV spread across the country. Eradication took 8 years and $20 million.[7]
   - In The Netherlands (1997), classical swine fever virus (CSFV) circulated in domestic swine herds for 5-to-7 weeks before it was recognized. Eradication cost $2.3 billion.[6,10]
   - In the United Kingdom (2001), foot-and-mouth disease virus (FMDV) infections went unnoticed and the virus was spread around the country by moving infected animals. Eradication took 6 months, the euthanasia of 4 million animals, and $4.0 billion.[1]

2. The current ASFV pandemic started on the other side of the world in 2007 and - despite all efforts - reached our doorstep when it was detected in the Dominican Republic in 2021.

   We need early detection to protect the U.S. swine industry from trade-impacting diseases, but how? Currently, detection is usually based on voluntary reports of unusual clinical signs ("syndromic surveillance"). There are two fatal problems with this approach.

   - Problem #1: For a variety of reasons, people are reluctant to report.[4] "Participatory surveillance" addresses this reluctance by encouraging active participation by the population at risk.[9] A critical mass of participation across supply chains, areas, and regions is essential!

- Problem #2: Observational data has quality issues because trade-impacting diseases do not produce unique clinical signs. ASFV and CSFV, for example, often cause clinical signs that resemble the "garden-variety" pathogens we deal with daily. Unreliable data = chaos.

3. The solution to the data quality issue is on-farm sampling and laboratory testing. However, we do not have an earlier program to borrow from. When the U.S. CSFV eradication program began in 1961, detection was based on testing every animal in CSFV-suspect herds. Testing every animal was possible because herds of 10 to 15 sows were typical.

   When PRV surveillance protocols were developed in the mid-1980's, we switched from whole-herd testing to representative sampling. That is, the number of animals tested (usually around 30 animals) was based on an estimated 95% probability of detecting a prevalence of 10% PRV positive animals in the population.

   However, we now know that the actual probability of detection during those times was commonly much lower than 95%, as this estimate of detection was based upon the assumption that the 30 sampled animals shared a common airspace (pen or building) with a uniform distribution of disease throughout that given population. Such assumptions of uniform distribution do not commonly exist in modern production settings with any number of different airspaces, pens, or buildings on a given premises.

   Neither the CSFV or the PRV approach is acceptable in terms of timeliness and cost.

4. Participatory Surveillance provides a viable alternative to earlier approaches.

   Participating herds collecting a few samples from pigs or pens of pigs with poor or sub-standard health ("targeted sampling") on a routine and well-defined schedule. Targeted sampling was recommended for both ASFV and CSFV in recent key publications.2,3,5 The recommended specimens are easily collected, supported by the peer reviewed literature, and widely used by US pork producers: oral fluids, blood swabs, and/or oral swabs.

   Samples are submitted to NAHLN laboratories for testing. Testing in NAHLN laboratories assures the use of tests that are equivalent or comparable to USDA NAHLN ASF-CSF approved methods, the full quality assurance standards required by the American Association of Veterinary Laboratory Diagnosticians, and the capable network of electronic communications needed in the case of adverse results. This approach will assure US trading partners US SHIP is following well-respected and quality veterinary diagnostic laboratory practices and standards.

5. What is the level of sensitivity of detection of the current US SHIP participatory surveillance sampling and testing standards?

   A team at Iowa State has been looking at this question. **In an expansive simulation based on 15,722 herds in eight Midwestern states, participatory surveillance resulted in at least a 90% probability of detection if there were just 15 positive herds in the region (0.01% herd-level prevalence).**

6. While US SHIP participatory surveillance protocols are anticipated to continue to evolve over the course time with new information and the provision of stakeholder direction; all the evidence leads to the conclusion participatory surveillance would put the U.S. swine industry in a position to protect itself against and/or efficiently respond to the incursion of a trade-impacting disease.

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Partnering to expand ASF and CSF PCR testing capacities

ASF and CSF PCR Negative Cohort Studies – Partnering to expand testing capacities, support further evaluation and validation of two commercially available ASF PCR assays, and enhance preparedness across the NAHLN.

Excerpt of US SHIP Sampling & Testing Resolution passed at 2021 US SHIP HOD:

"Work closely with USDA, SAHOs, and industry partners to complete a study (ASF/CSF PCR Negative Cohort Study) that aims to build upon a number of USDA sponsored efforts looking to expand the number of ASF/CSF PCR assays and sample types approved for use to support ASF/CSF diagnostic efforts."

Over the course of the past year, the USDA (i.e., National Animal Health Lab Network – 2021 Farm Bill and the USDA National Animal Health Monitoring Study on Swine) and the National Pork Board stepped forward to fund two companion ASF/CSF PCR Negative Cohort Studies (total of ~ $250K to complete this work). These companion studies are being completed as a cooperative effort between the USDA (NAHLN and FADDL), ISU VDL, SDSU ADRDL, UMN VDL, and two principal suppliers (TetraCore and Thermofisher) of commercial PCR assays that have substantive manufacturing capacity in the US.

These studies are in the process of being completed with preliminary results and findings to be shared at the US SHIP HOD meeting.

Figure 1. Overview of the ASF and CSF PCR negative cohort studies.[1, 2]

ASF PCR Assay	Sample Types	
	Oral Fluids	Processing Fluids
USDA NAHLN (Custom)	250 samples	2,044,661. (2.8%)
Tetracore (Commercial)	250 samples	17,635,061. (24.4%)
Thermo Fisher (Commercial)	250 samples	52,701,285. (72.8%)

[1]Aliquots of the 250 oral fluid samples and 250 processing fluid samples received from farm sites from across the US will be tested by the current NAHLN, Tetracore, and Thermo Fisher ASF and CSF PCR assays at ISU VDL, SDSU ADRDL, and UMN VDL.
[2] Each study (ASF and the CSF PCR Negative Cohort studies) involved conducting a total of 4,500 PCR assays across the three laboratories in efforts to more fully validate the specificity of these assays across these otherwise complex sample types obtained from clinical specimens from farm sites located throughout the US.

Overview / Background to these ASF/CSF PCR Negative Cohort Studies:

The COVID-19 pandemic clearly illustrated the value of having diversified and scalable supply chains of the consumables used in diagnostic testing; effective private sector, state, and federal partnerships; and fit for purpose diagnostic sample types that are well suited for high throughput testing environments. These studies involve leveraging the capabilities and expertise from three swine interest NAHLN laboratories working together with USDA colleagues and industry partners to enhance ASF and CSF PCR testing capacities and preparedness. This study aims to build upon a number of USDA sponsored efforts looking to expand the number of ASF and CSF PCR assays and sample types approved for use to support ASF and CSF diagnostic efforts. Specifically, the proposed study serves to more fully validate the specificity of three ASF PCR and three CSF PCR assays across two aggregate sample types (oral fluids and processing fluids) in US swine. Fully validating the specificity of diagnostic assays across a range of otherwise complex sample types in clinical specimens obtained from farm sites across the country is especially important in FAD diagnostic use cases. In addition to the custom-built ASF PCR and CSF PCR currently approved for use in NAHLN labs, this study will include ASF PCR assays produced by Tetracore and Thermo Fisher. These industry partners are leaders in molecular diagnostics for veterinary applications that have highly scalable diagnostic reagent manufacturing capacity in the US. This study aims to make a substantive contribution towards a much larger collective effort focused on creating a step-change in the ASF PCR and CSF PCR diagnostic testing capacity and state of readiness across the NAHLN.

Timeline: These two companion studies will be fully completed and summarized in early fall 2022.

US SHIP Classifications, Delegate Allocation, and Governance

I. US SHIP Classifications (6 groupings, for delegate allocation)

1. Breeding Herd: Sites: ≥ 1,000 breeding females or ≥ 50 mature boars (Inventory)
2. Growing Pig: Sites: ≥ 1,000 post-weaned pigs (Inventory)
3. Slaughter Facility: Slaughter ≥ 100,000 pigs / year
4. Small Holdings:
   a. Farm sites with ≥ 100 post-weaned pigs (Inventory) that don't fit into any of the other commercial farm site categories.
   b. USDA or State Inspected slaughter facilities slaughtering < 100,000 pigs / year
5. Non-commercial: Production sites with ≤ 100 pigs.
6. Live Animal Marketing Operations: Sites that aggregate swine for resale of such swine (> 100 pigs/week) onto slaughter facilities. (***New Classification in 2022***)

Notes:
[1] Farrow-to-Finish or Farrow-to-Feeder sites ≥ 1,000 breeding females will be classified as Breeding Herds.
[2] Farrow-to-Finish or Farrow-to-Feeder sites < 1,000 breeding females will be classified as Small Holdings.
[3] Boar Stud sites (> 50 mature/working boars) will be classified as Breeding Herds for delegate allocation purposes.

US SHIP Classifications are important as it relates to ensuring appropriate representation from the various segments of US pork industry and in the delegate allocation process.

Such US SHIP Classifications (and associated definitions) also create clarity for the states as to "who to ask" when seeking industry stakeholder volunteers to serve as delegates in representing the interests of a particular "Classification or Segment" of the industry in the US SHIP House of Delegates.

However, there will not be any "Classification Specific" votes cast at the US SHIP House of Delegates Meeting to be held on September 6 - 8, 2022 in Bloomington, MN.

II. Overview of US SHIP Delegate Allocation

Formula based approach = (Base Allocation & Distribution of At Large Delegates)

Brief Description of Methodology Used For Delegate Allocation:
This formula-based approach uses a combination of a baseline allocation of delegates to all participating states, as well as the generation and subsequent distribution of a pool of At-Large Breeding Herd and Growing Pig delegates based upon the percentage of Breeding Swine and Growing Pigs (respectively) participating in US SHIP that are located in the state.

The formula-based approach is structured such that the number of At-Large delegates increase in direct proportion to the number of states participating in the US SHIP.

Detailed Description with Explanation:

1. Participating states will be allotted one delegate (vote) for each of the US SHIP Classifications of which they have active industry participants of that type (Classification) operating in their state.

   For example:

   a. If a state has all 5 of the Classifications operating in their state, they get 5 delegates, 1 delegate assigned to each of the 5 Classifications.
   b. If a state only has 2 of the Classifications operating in their state, they get 2 delegates, 1 to each respective Classification.

2. A pool of At-large delegates will be generated for allocation to the states. Two At-large delegates (1 Breeding Herd delegate and 1 Growing Pig delegate) will be generated for each state participating in the US SHIP House of Delegates.

   For example:

   a. If 25 states participate, a pool of 25 Breeding Herd and 25 Growing Pig At-Large delegates (votes) will be generated for allocation.

3. The pool of At-large delegates will be allocated to states as a percentage of all Breeding Swine and Growing Pigs (respectively) ***enrolled*** in US SHIP that are located in a given state.

   For example:

   a. Using example above of 25 participating states: If a state had 4% of the Breeding Swine inventory and 8% of the Growing Pig inventory ***enrolled*** among participating states, they would be allocated 1 additional Breeding Herd delegate and 2 additional Growing Pig delegates.

4. Live Animal Marketing Operation delegates (***New Classification in 2022***): The 15 states that generate the most Breeding and Growing Pig at large delegates (combined) will each have one Live Animal Marketing Operation delegate allocated to their respective state's delegation. The Live Animal Marketing Operation delegate is an additional delegate invitation being extended to the 15 states that generate the most Breeding and Growing Pig at large delegates (combined).

Note: Since US SHIP currently in the start-up phase, the number of Breeding Swine and Growing Pigs ***enrolled*** (versus certified) at the end of June 2022 is being used to allocate the Breeding Herd and Growing Pig At-Large Delegates (respectively) for the 2nd US SHIP House of Delegates meeting.

III. Delegate Allocation for 2022 US SHIP HOD
(enrollment as of 7/8/2022)

31 states have demonstrated interest in US SHIP

State	Non-commercial	Small commercial	Breeding herd	Growing	Slaughter	Live Marketing	Total
Alabama	1	1	1	1	0	0	**4**
Arizona	1	1	1	1	0	0	**4**
Arkansas	1	1	1	1	0	0	**4**
California	1	1	1	1	1	0	**5**
Colorado	1	1	2	1	0	0	**5**
Georgia	1	1	1	1	0	0	**4**
Illinois	1	1	3	2	1	1	**9**
Indiana	1	1	1	3	1	1	**8**
Iowa	1	1	6	12	1	1	**22**
Kansas	1	1	3	3	1	1	**10**
Kentucky	1	1	1	1	1	0	**5**
Michigan	1	1	1	2	1	1	**7**
Minnesota	1	1	4	5	1	1	**13**
Mississippi	1	1	1	1	0	0	**4**
Missouri	1	1	2	2	1	1	**8**
Montana	1	1	1	1	0	0	**4**
Nebraska	1	1	3	3	1	1	**10**
North Carolina	1	1	4	4	1	1	**12**
North Dakota	1	1	1	1	0	0	**4**
Ohio	1	1	1	2	1	1	**7**
Oklahoma	1	1	4	3	1	1	**11**
Oregon	1	1	1	1	1	0	**5**
Pennsylvania	1	1	2	2	1	1	**8**
South Carolina	1	1	1	1	0	0	**4**
South Dakota	1	1	4	1	1	1	**9**
Tennessee	1	1	1	1	1	0	**5**
Texas	1	1	3	2	1	1	**9**
Utah	1	1	1	1	0	1	**5**
Virginia	1	1	1	1	1	0	**5**
Wisconsin	1	1	1	1	1	0	**5**
Wyoming	1	1	1	1	0	0	**4**
Total	**31**	**31**	**59**	**63**	**20**	**15**	**219**

IV. Other US SHIP Governance Items

1. Voting delegates representing each participating state will be appointed by each participating state's pork producer association. If a participating state does not have an active pork producer association, delegate selection will be deferred to the respective State Animal Health Official or Department of Agriculture.

2. The State Animal Health Official or their designee is to serve as one of the voting delegates among their respective state's delegation at the US SHIP House of Delegates.

    - This is not an additional delegate and does not have any implication on the number of delegates being allocated for use by participating states.
    - This language is included simply to clarify the importance of the SAHO's (and/or respective State Department of Agriculture's or Board of Animal Health's) role and engagement with this US SHIP development project in their respective state.
    - The SAHO's or their designee's engagement in US SHIP and the US SHIP House of Delegates process is highly important.

3. Delegates must be present to vote at the US SHIP House of Delegates.

4. Individual delegates attending the US SHIP House of Delegates cannot cast more than one vote or cast votes on other delegates' behalf (i.e., one person/delegate = one vote).

5. States are not required to have representation or be present at the US SHIP House of Delegates to participate in the US SHIP.

6. Definitions of US SHIP Program Standards vs Resolutions:

    - US SHIP Program Standard = Requirements to be met or exceeded by program participants to be certified in US SHIP.
    - US SHIP Resolution = Charges to pursue initiatives or further explore specific issues that aim to further inform US SHIP program content and direction.

7. Approval of Standards and Resolutions by simple majority (>50%) of votes cast.

8. Amendments to both Standards and Resolutions can be brought forth as long as such amendment remains within the scope under consideration.

9. Motions for new Standards or Resolutions which have not been vetted and previously circulated to delegates will not be considered for vote but instead tabled for further review and consideration.

Minutes from Inaugural (2021) US SHIP HOD Business Meeting

August 24, 2021- 1:00 – 2:07 PM
1:00 PM – US SHIP House of Delegates Business Meeting called to order by Tyler Holck (US SHIP Project Coordinator).

Agenda
- The agenda for the US SHIP House of Delegates Business Meeting were read. Rules for the meeting were also laid out.
- Bret Marsh motioned to approve the agenda. Seconded by Dustin Oedekoven.
- Motion Carried.

Sampling and Testing Standards – Dr. Jerry Torrison discussed sampling and testing requirements for US SHIP outlined below and on pages 13 – 16 of your 2020 Conference Proceedings.
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 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 are being proposed to vary by Production Site Type and the ASF-CSF status of the US, State, or Region (Tables 1, 2, and 3; pages 13 – 16 in Conference Proceedings 2020).
- 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 U.S.
- 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.

Discussion:
1. Should there be numbers filled in on Tables 2 and 3 (pages 15-16) under Option 2 column?
    a. No, oral fluids are not being recommended as an aggregate sample type for boar studs and breeding herds but are being recommended as an individual sample type.

Vote:

- Michael Neault motioned to approve the US SHIP Sampling and Testing standards. Seconded by Craig Anderson.
- Motion Carried.

Traceability Standards – Dr. James Lowe discussed traceability requirements for US SHIP outlined below and on pages 11 – 12 of your 2020 Conference Proceedings.

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:
    - Premise Identification Number (PIN)
    - Site Owner Contact Information
    - Swine Owner
    - Contact Information
    - Common Name of Site
    - Premise Type (Boar Stud, Breeding Herd, Farrow-Feeder/Finish, Growing Pig, etc.)
    - Expected Site Capacity (Number of Breeding Swine and/or Growing Pigs)
    - Site Location Information:
        - Latitude and Longitude
        - 911 Street Address, if one has been assigned
    - Date of initial enrollment of the site in US SHIP, or date of first usage of the site by current swine owner
    - Date of last usage of the site by swine owner (if applicable)

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:
    - Date of movement
    - Origin State
    - Origin PIN
    - Destination State
    - Destination PIN
    - Head in movement
    - 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:
    - Date of movement
    - Origin State
    - Origin PIN
    - Destination State
    - Destination PIN
    - 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.

Discussion:

- No discussion.

Vote:

- Luc Dufresne (OK) motioned to approve the US SHIP Traceability standards. Seconded by Dustin Oedekoven (SD).
- Michael Neault (SC) made a motion to amend the standard text of "Official State Agency in a timely manner (e.g. < 96 hours)." noted under both swine movement information and semen movement information to the following: "Official State Agency in a timely manner (e.g. < 72 hours)." The motion to amend was seconded by a voting delegate from OH. Motion carried. Amendment passed.
- Motion to approve standard, as amended, carried.

Biosecurity Standards – Dr. Montse Torremorell discussed biosecurity requirements for US SHIP outlined below and on pages 12 – 13 of your 2020 Conference Proceedings.

Feed Supply

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

Personnel

- Permissioned 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.

Discussion:

- Can we vote on the biosecurity standards separately? – No, the standards are together. An amendment can be made to the original motion.
- Mike Martin (NC) would like to strike the feed supply standard from the biosecurity standards. The feeding of garbage falls under USDA oversight. It is prohibited in 27 states but could drive that particular part of the industry into the ground in states where it is legal; thus, would ask to strike the Feed Supply standard and allow the working group (Resolution 3) time to further evaluate federal and state regulations regarding garbage feeding.

- Dustin Oedekoven notes that the goal of US SHIP is to create a program that allows participants to continue continuity of business in the event of a foreign animal disease. Garbage feeding, especially that including meat, is a well-documented risk around the globe. As a SAHO, he would not feel comfortable permitting the interstate movement of animals fed garbage in the event of a FAD outbreak. If US SHIP keeps the Feed Supply standard, the segment excluded would still be subject to additional testing which is no different than what would happen if ASF was introduced into the USA tomorrow. The delegate body needs to stay narrowly focused on the monitored status and keep the prohibition of garbage feeding in the biosecurity standard.
- Garbage feeding entities should be included in the program. However, a concern is how hard will it be to change or tweak this standard (as suggested in breakout session) once it is a standard in the program. We do not want to upset that segment of the industry right off the bat with little interest of them participating later. US SHIP is not meant to be a foreign animal disease program; thus, we should not think only of FADs but on the overall health of swine. Unnamed delegate would vote to strike and send back to resolutions committee to see what works best for the program going forward.
- Does this standard mean all sites that practice garbage feeding will be excluded from US SHIP? If that practice is going on and we do not allow garbage feeding, we lose the traceability of those sites (not part of the US SHIP).
- Dr. Jeff Zimmerman notes that research shows garbage feeding is one of the main ways that ASF spreads around the world.
- What is the definition of garbage? – Per Dr. Kevin Petersburg, Garbage, as defined in the CFR, is waste material derived in whole or in part from the meat of any animal (including fish and poultry) or other animal material, and other refuse of any character whatsoever that has been associated with any such material, resulting from the handling, preparation, cooking or consumption of food, but exempts feeding ordinary household waste directly to pigs that live on the same site where the household is located.
- Tiffany Lee notes that the proposed standard contradicts what is in regulation. US SHIP has not thoroughly matched the standard proposed to regulation. Garbage does include meat products and the standard says "garbage that has the potential to include meat products" which she believes contradict each other. The language needs to be better vetted out for this standard, so she would suggest we strike from biosecurity standard.
- We don't want to exclude part of the industry that we want to know more about.
- We know there is a significant risk of ASF in swill feeding. Is there a quantifiable difference between swill feeding and licensed garbage feeding? – Unsure of answer, but we need to better understand the compliance level for those licensed.
- Kevin Brightbill suggests we could add a requirement to the standard that would allow the committee to further explore this before we exclude this segment of the industry. How large of an issue is this? And what about "ordinary household waste", how is that different and/or pose less risk?
- Garbage feeding is one of the major risks of spreading FADs that we want to keep out of this country. The purpose of US SHIP is to have continuity of business (keep animals, sell animals, and export overseas, etc.), but if our foreign customers see that swill feeding is an acceptable practice, will they be okay with that and will they say our standards are not high enough?
- We need to stay narrowly focused on and not wander off the path and let perfect become our enemy. We are not excluding any particular entity. We need to ensure to our trading partners that we are in compliance.

Vote:

- Matt Ackerman (IN) motioned to approve the US SHIP Biosecurity standards. Seconded by Dustin Oedekoven (SD).
- Mike Martin (NC) made a motion to strike the standard "The feeding of swill, garbage, or table

waste that has the potential to include meat products is strictly prohibited." Seconded by Peter Mundschenk (AZ). Motion failed.
- Motion, as originally presented, carried.

Resolution 1 - Traceability Case Study
Discussion:
- No discussion.

Vote:
- Dwain Guggenbiller (OH) motioned to approve the US SHIP Resolution #1 – Traceability Case Study. Seconded by Dustin Oedekoven (SD).
- Motion carried.

Resolution 2 - Pilot demonstration of a more comprehensive approach and system of traceability in the US pork industry (i.e., similar to PigTRACE™ Canada).
Discussion:
- No discussion.

Vote:
- Michael Neault (SC) motioned to approve the US SHIP Resolution #2 – Pilot demonstration of a more comprehensive approach and system of traceability in the US pork industry. Seconded by voting delegate (IL).
- Motion carried.

Resolution 3 – Feed Biosafety
Discussion:
- No discussion.

Vote:
- Gordon Spronk (MN) motioned to approve the US SHIP Resolution #3 – Feed Biosafety. Seconded by Dustin Oedekoven (SD).
- Michelle Sprague (IA) motioned to amend the resolution from: "The US SHIP House of Delegates requests the commissioning of a working group to provide recommendations and next steps for the US SHIP program to address the risks associated with disease transmission in feed for a broadly applicable feed biosafety plan to be recognized nationally." to "The US SHIP House of Delegates requests the commissioning of a working group to provide recommendations and next steps for the US SHIP program to address the risks associated with disease transmission in feed including but not limited to regulated garbage feeding for a broadly applicable feed biosafety plan to be recognized nationally." Seconded by Beth Thompson (MN).
- Motion to approve resolution, as amended, carried.

Resolution 4 – Biosecurity Site Plans
Discussion:
- Breakout discussion suggested wordsmithing the Resolved section to replace the word "leverage" with "integrate". The approved resolution reads: "The US SHIP House of Delegates requests the commissioning of 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."

Vote:

- Joel Nerem (SD) motioned to approve the US SHIP Resolution #4 – Biosecurity Site Plans. Seconded by Michael Neault (SC).
- Motion carried.

Resolution 5 – Sanitary Standards of Transportation to/from Terminal Markets

Discussion:

- No discussion.

Vote:

- Tiffany Lee (MI) motioned to approve the US SHIP Resolution #5 – Sanitary Standards of Transportation to/from Terminal Markets. Seconded by Zack McCullen, III (NC).
- Mark Ladd (NC) motioned to amend the resolution to replace "sanitize" throughout the resolution to "clean and disinfect". Seconded by voting delegate from UT.
- Motion to approve resolution, as amended, carried.

Resolution 6 – Live Animal Marketing Channels

Discussion:

- Discussion in the breakout session resulted in a recommendation to remove "(cull)" from the resolution title.
- The breakout session attendees also recommended adding the word "all" into the resolved portion which reads as: "This working group would provide recommended next steps for the US SHIP program as it relates to additional research or recommended program standards to better mitigate the risk and impact of disease transmission in and from all live animal marketing channels."

Vote:

- Craig Andersen (SD) motioned to approve the US SHIP Resolution #6 – Live Animal Marketing Channels. Seconded by Mary Battrell (NC).
- Motion carried.

Resolution 7 – Sampling and Testing, 12-Month Research Period, Plan of Work

Discussion:

No discussion.

Vote:

- Al Wulfekuhle (IA) motioned to approve the US SHIP Resolution #7 – Sampling and Testing, 12-Month Research Period, Plan of Work. Seconded by Joel Nerem (SD).
- Amanda Price (UT) motioned to amend the resolution from "2. Complete further modeling of disease spread and sensitivities of detection achieved via US SHIP ASF-CSF Monitored participatory surveillance requirements" to "2. Complete further modeling of disease spread and sensitivities of detection achieved via US SHIP ASF-CSF Monitored participatory sampling and testing requirements." Seconded by a voting delegate from Illinois.
- Motion to approve resolution, as amended, carried.

2:07 PM – Bret Marsh (IN) made a motion to adjourn the US SHIP Business Meeting. Seconded by Michael Neault (SC). Motion carried. Meeting Adjourned.

US SHIP HOD Business Meeting Procedures

Section 1 - Rules

1. The delegate meeting will be conducted pursuant to these Standing Rules, and Roberts Rules of Order (in that order).
2. The Standing Rules and Roberts Rules of Order may be altered by a motion to suspend the rules, which requires a two-thirds vote.

Section 2 – Credentials

1. All voting delegates on the delegate floor must be registered with US Swine Health Improvement Plan.
2. Identification badges issued at the time of registration must be worn for admission to the delegate floor and may not be transferred among individuals.
3. Designated seating by participating state will be provided for both voting and non-voting delegates with additional seating available for invited guests.
4. A report of the total number of voting delegates present will be shared by the Chair along with the required number of affirmative votes to approve a motion.

Section 3 – Debate

1. Only voting delegates can introduce a motion and provide a 2nd.
2. In recognizing speakers, the Chair will give preference to (a) delegates who have not previously spoken on the substantive issue being debated (b) delegates; and (c) others.
3. Each speaker should identify themselves by citing their name, organization, and state they represent prior to addressing the delegate body.
4. Each speaker will be limited to two minutes. The Chair may limit debate further to accommodate as many speakers as possible and allow for more business to be considered.

Section 4 – Voting

1. Voting will be in person by delegates only.
2. Amendments to vetted motions (standards and resolutions) will be entertained, new motions not previously vetted will be tabled for further consideration.
3. Each registered voting delegate will receive a voting paddle to be used when voting.
4. The Chair will specify the manner in which votes will be taken.
5. The Chair can appoint tellers to assist in counting the votes.

Terminology and Definitions

A glossary of terminology and definitions has been included for completeness.

These terms/definitions are from a number of USDA APHIS references, as well as those specifically derived to meet the needs of US SHIP.

Administrator. The Administrator, Animal and Plant Health Inspection Service, or any other employee of the Animal and Plant Health Inspection Service delegated to act in the Administrator's stead.

African swine fever (ASF). A contagious, infectious, and communicable disease of domestic and feral swine caused by infection with African swine fever virus (ASFV).

Aggregate sample. A single sample collected at one specific time and location potentially containing diagnostic targets from two or more animals. Examples of aggregate samples include processing fluids, pen-based oral fluids, and environmental samples, e.g., air or water.

Antibody. Proteins produced by the immune system in response to a foreign antigen, such as infection with a bacteria or virus.

APHIS. The Animal and Plant Health Inspection Service of the U.S. Department of Agriculture.

Approved laboratory. Any National Animal Health Laboratory Network (NAHLN) Veterinary Diagnostic Laboratory (VDL) approved to perform ASFV and CSFV testing.

ASF-CSF monitored production site. A production site in compliance with US SHIP certification requirements.

Backyard swine. Domestic swine raised for food production in smaller numbers than commercial swine operations (<1,000 per premise) and kept either in a housing facility with solid-sided walls, or with access to the outdoors surrounded by a fence or other barrier. Backyard swine can also be transitional swine.

Biosecurity. A set of management and physical measures designed to reduce the risk of the introduction, establishment, and spread of pathogens in and between herds.

Breeder swine. Sexually intact swine over 6 months of age.

Breeding herd. Inventory of breeder swine, i.e., open, mated, or lactating females and boars (also see US SHIP Production Sites Types and Classifications).

Carrier (carrier state). An individual that harbors ASFV or CSFV in the absence of discernible clinical disease and serves as a potential source of infection.

Certified ASV-CSF monitored. US SHIP participants shown to be in compliance with the biosecurity, traceability and surveillance requirements established through the House of Delegates.

Classical swine fever (CSF). A contagious, infectious, and communicable disease of domestic and feral swine caused by infection with classical swine fever virus (CSFV).

Classification. A designation earned by participation in a Plan program.

Clinical signs. Objective evidence of a disease perceptible to the observer. (Note: subjective sensations reported by a human are "symptoms").

Commercial production swine. Swine that are continuously managed for pork production on production sites sufficient to prevent exposure to either transitional production swine or feral swine (also see US SHIP classifications).

Common ground. The ground, areas, buildings or equipment communally shared by any specific group or groups of livestock.

Compartment. Any defined animal subpopulation contained in one or more establishments under a common biosecurity management system for which surveillance, control, and biosecurity measures have been applied with respect to a specific disease.

Confirmed case. Any animal determined to be infected with ASFV or CSFV by an official epidemiologist and whose diagnosis is supported by official ASFV or CSFV test results.

Cooperating State Agency. Any State authority recognized by the Department to cooperate in the administration of the provisions of the program. This may include the State animal health authority or the Official State Agency.

Department. The United States Department of Agriculture.

Direct shipment. Movement without unloading en route, without contact with swine of lesser ASFV status, and without contact with ASFV-infected or ASFV-exposed livestock.

ELISA (enzyme-linked immunosorbent assay). An assay designed to detect pathogen-specific antibody or antigen.

Embryo. The initial stages of development of an animal, after collection from the natural mother and while it is capable of being transferred to a recipient dam, but not after it has been transferred to a recipient dam.

Epidemiological unit. A group of animals with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogen either because they share a common environment (e.g., animals in a barn or pen), or because of common management practices.

Exposed swine. Any swine in contact with equipment, personnel, supplies, feedstuffs, or any article contaminated with ASFV or CSFV, or any swine infected with ASFV or CSFV, including all swine in a known infected herd.

Farm of origin. A production site where swine were farrowed or on which they have resided for at least 30 consecutive days immediately prior to movement.

Farrow. Birth of one or more live or dead piglets on or after the 110th day of pregnancy, i.e., parturition.

Feeder swine. Weaned pigs under 6 months of age (nursery, grower, finisher stages) that are not slaughter swine.

Feral or wild swine. Free-roaming swine.

Gestation. Period between conception and farrowing during which time the embryo or fetus develops.

Herd. A group of livestock under the same management system that are able to mix. Animals in a herd share common risk factors for disease, so the distribution of disease within the herd is assumed to be relatively homogenous (Cameron and Baldock, 1998). Each segregated group of swine on an individual premises, i.e., a building or room, is considered a separate herd (USDA: APHIS, 2003). See epidemiological unit.

Incidence. A rate, with the number of new cases of the specified disease during a defined period of time as the numerator and the number of individuals in the population at risk as the denominator.

Incubation period. The period between the introduction of the pathogenic agent into the animal and the occurrence of the first clinical signs of the disease.

Index case. The first confirmed case of ASF or CSF in domestic or feral swine.

Infected swine. Any swine determined to be infected with ASFV or CSFV by an official epidemiologist and whose diagnosis is supported by official ASFV or CSFV test results.

Infective period. Period during which the infected pig can be a source of ASFV or CSFV for other pigs.

Interstate swine movement report. A paper or electronic document signed by a producer moving swine giving notice that a group of animals is being moved across State lines in a swine production system.

Interstate. From one State into or through any other State. Interstate movement of animals affected with African swine fever or classical swine fever or any other communicable foreign disease not known to exist in the United States is prohibited.

Intrastate. Within a State.

Isolation. Separation of swine by a physical barrier in such a manner that one pig does not have access to an isolated pig's body, excrement, or discharges of another pig; does not share a building with a common ventilation system; and is not within 10 feet of another pig.

Known infected herd. Any herd in which any swine have been determined to be infected with ASFV or CSFV by an official epidemiologist.

Litter. Piglets born to, or fostered onto, a sow.

Meat juice. The serosanguinous fluid recovered from muscle tissues (meat) after it is frozen and then allowed to thaw.

Monitor. The systematic, ongoing collection and assessment of health data in a population.

Monitored negative feral swine population. Feral swine originating from areas that have been geographically defined and under continuous monitoring with no evidence of infection and classified by the ASFV/CSFV epidemiologist as a monitored negative feral swine population.

Moved. Shipped, transported, or otherwise moved; or delivered or received for movement by land, water, or air.

NAHLN. The National Animal Health Laboratory Network consists of Federal, State, and university-associated animal health laboratories within the United States.

Non-commercial farm sites. Sites with fewer than 100 pigs. (also see US SHIP Production Sites Types and Classifications)

Non-commercial production swine. All swine that do not fit the definition of commercial production swine.

Nucleic acid. Macromolecules, either DNA or RNA, that carry genetic information.

Official ASFV or CSFV test. Any test for the diagnosis of ASFV or CSFV approved by the Administrator and conducted in a laboratory approved by the Administrator to determine the presence or absence of ASFV or CSFV antibody or nucleic acid.

Official epidemiologist. A State or Federal veterinarian designated by the State animal health official and veterinarian in charge to investigate and diagnose suspected ASFV or CSFV in livestock.

Official State Agency. The State authority recognized by the Department to cooperate in the administration of the Plan.

Oral fluid. A fluid mixture of saliva and oral mucosal transudate collected by use of an absorptive device.

Owner. The person or legal entity with legal or rightful title.

Outbreak. The detection of one or more ASFV- or CSFV-positive swine on a premises.

Pathogen. Infectious organism capable of causing disease.

Pathogenic. Capable of producing disease.

Pathogenicity. The quality or state of being capable of causing disease. Virulence is a measure of the degree of pathogenicity.

PCR. Polymerase chain reaction - an assay designed to detect nucleic acid.

Permit. An official document issued for and prior to the interstate shipment of ASFV- or CSFV-infected or -exposed swine by a Veterinary Services representative, State representative, or accredited veterinarian, stating: (1) the number of swine to be moved, (2) the purpose for which the swine are to be moved, (3) the points of origin and destination, (4) the consignor and consignee, and (5) additional information required by applicable State and Federal regulations.

Plan. The provisions of the United States Swine Health Improvement Plan (US SHIP) describing the requirements for achieving ASF-CSF Monitored Certification.

Plasma. The liquid portion of unclotted blood containing red cells, white cells, and platelets.

Pooled sample. A sample created by combining individually collected samples, often in equal portions, prior to diagnostic testing.

Premises designations used in ASFV and CSFV incidence response

At-risk premises. Within the infected zone or buffer zone, premises with swine, none of which is exhibiting clinical signs compatible with ASF or CSF. At risk premises may move animals or products within the control area by permit.

Contact premises. Within the infected zone or buffer zone, premises with swine that may have been exposed to ASFV or CSFV, either directly or indirectly, including but not limited to exposure to animals, animal products, fomites, or people from infected premises.

Free premises. Premises in a free area, i.e., outside of a control area, and not a contact or suspect premises.

Infected premises. Within the infected zone, a premises where a presumptive ASF or CSF positive case or confirmed positive case exists based on laboratory results, compatible clinical signs, case definition, and international standards.

Monitored premises. Within the infected zone or buffer zone, a premises that demonstrates it is not an infected premises, a contact premises, or a suspect premises. Monitored premises can move animals or products out of the control area by permit.

Suspect premises. Premises under investigation due to the presence of susceptible animals and clinical signs compatible with ASF or CSF.

Premises identification number (PIN). A nationally unique number assigned by a State, Tribal, and/or Federal animal health authority to a premises that is, in the judgment of the State, Tribal, and/or Federal animal health authority a geographically distinct location from other premises.

Premises. A location where swine are raised, housed, or pass through during commerce.

Prevalence. A proportion, with the number of cases of the specified disease at a specific point in time as the numerator and the number of individuals in the population as the denominator.

Processing fluid. The serosanguinous fluid recovered from tissues (testicles and/or tails) collected at the time of pig castration and tail docking.

Production site. A geographically definable area that includes pork production facilities and ancillary structures under common ownership or management systems and the surrounding space within a 100-foot perimeter (also see US SHIP Production Sites Types and Classifications).

Program. Management, sanitation, testing, and monitoring procedures which, if complied with, will qualify, and maintain qualification for ASF-CSF Monitored Certification status.

Recognized slaughtering establishment. A slaughtering establishment operated under the provisions of the Federal Meat Inspection Act (21 U.S.C. 601 et seq.) or a State-inspected slaughtering establishment (also see US SHIP Production Sites Types and Classifications).

Region. A land area identified by geological, political, or surveyed boundaries.

State Animal Health Official (SAHO). The State official who is responsible for the livestock and poultry disease control and eradication programs in the official's State/Area, or that person's designated representative.

Secretary. The Secretary of the United States Department of Agriculture, or any officer or employee of the Department delegated to act in the Secretary's stead.

Serum. The liquid recovered from clotted blood.

Slaughter swine. Swine being sold or moved for slaughter purposes only.

Small holding. Production sites with ≥ 100 and < 1,000 breeder or feeder swine (also see US SHIP Production Sites Types).

State representative. A person regularly employed in animal health work by a State and authorized by the State to perform the functions involved or under a cooperative agreement with USDA.

State. Any of the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, the Virgin Islands of the United States, or any territory or possession of the United States.

Surveillance. The systematic, ongoing collection and assessment of health data in a population with the intent of taking action when specific thresholds or conditions are met.

Swine production health plan. A written agreement developed for a swine production system designed to maintain the health of the swine and detect signs of communicable disease.

Swine production system accredited veterinarian. An accredited veterinarian who is named in a swine production health plan for a premises within a swine production system and who performs inspection of such premises and animals and other duties related to the movement of swine in a swine production system.

Swine production system. A swine production enterprise involving production on multiple premises, i.e., sow herds, nursery herds, and growing or finishing herds, but not including slaughter plants or livestock markets, that are connected by ownership or contractual relationships, between which swine move while remaining under the control of a single owner or a group of contractually connected owners.

Transitional production swine. Captive feral swine or swine that have reasonable opportunities to be exposed to feral swine.

US SHIP Classifications (5 groupings for delegate allocation)

Commercial breeding herd operations. Operations with a production site holding ≥ 1,000 breeder females or ≥ 50 mature boars.

Commercial growing pig operations. Operations with a production site holding ≥ 1,000 feeder swine.

Commercial slaughter facility operations. Operations with a facility that slaughters ≥ 100,000 pigs per year.

Small commercial herd or slaughter facility operations. i.) farrow-to-finish or farrow-to-feeder production site with < 1,000 breeder females. ii.) production site with ≥ 100 and < 1,000 feeder or breeder swine. iii.) USDA or State Inspected slaughter facilities slaughtering < 100,000 pigs per year.

Non-commercial operations. Operations with a production site holding < 100 pigs.

Live animal marketing operations. A dealer with a livestock yard/buying station (facility) that markets > 100 swine / week for resale of such swine to slaughter facilities.

US SHIP. United States Swine Health Improvement Plan. (usswinehealthimprovementplan.com)

US SHIP Production Site Types

Boar Stud. Production site with mature boars (inventory) that distribute semen to other production sites. (e.g., boar stud, with or without on-site isolation).

Breeding Herd. Production site with breeding females and house ≥ 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).

Growing Pig. Production site with ≥ 1,000 feeder swine (nursery, grower, or finisher).

Farrow to Feeder or Farrow to Finish. Production site with breeding females, grow feeder swine for purposes other than breeding stock replacement for this particular farm site, and house ≥ 1,000 breeder or feeder swine.

Small Holding. Production sites with ≥ 100 and < 1,000 breeder or feeder swine.

Non-Commercial. Production sites with < 100 pigs.

Live animal marketing operations. A dealer with a livestock yard/buying station (facility) that markets > 100 swine / week for resale of such swine to slaughter facilities.

US SHIP Program Standards. Requirement to be met or exceeded by enrolled producer and packer sites to be certified in the US SHIP pilot as approved by majority vote at the US SHIP House of Delegates.

US SHIP Resolutions. Charge to pursue initiatives or further explore specific issues that aim to further inform US SHIP program content and direction that are approved by majority vote at the US SHIP House of Delegates.

US SHIP Risk Level Classifications (All Outside of Control Areas)

Risk Level 1. US negative for ASFV and CSFV.

Risk Level 2. US positive, operations normalizing, and State or Region negative.

Risk Level 3. US positive, immediately after incursion, or State or Region positive.

US SHIP Technical Committee. A committee made up of technical experts on swine health, biosecurity, surveillance, and diagnostics and is composed of representatives from the swine industry, universities, and State and Federal governments.

US SHIP. US Swine Health Improvement Plan.

USDA. The United States Department of Agriculture.

Veterinarian-in-Charge. The veterinary official of Veterinary Services, APHIS, USDA, who is assigned by the Administrator to supervise and perform APHIS' official animal health work in the State/Area concerned.

Veterinary Services representative. A person employed by Veterinary Services, APHIS, USDA, who is authorized to perform official ASF eradication activities.

Veterinary Services. The Veterinary Services branch of APHIS, USDA.

Virulence. A quantitation of the pathogenicity of an agent. Can be numerically expressed as the ratio of the number of cases of overt infection in the total number infected. When death is the only criterion of severity, virulence is the case-fatality rate.

Virus elimination (VE). Cleaning and disinfection measures conducted to destroy or eliminate ASFV or CSFV from an affected premises.

Zone and area designations for ASFV and CSFV response

Buffer Zone. Zone immediately surrounding an ASFV or CSFV infected zone or a contact premises.

Control Area. Defined as ASFV or CSFV infected zone plus buffer zone.

Free Area. Area not included in any Federal or State Control Area.

Infected Zone. Zone immediately surrounding an ASFV- or CSFV-infected premises.

Surveillance Zone. Zone outside and along the border of a Control Area.