Seneca Valley Virus
and other SHIC Happenings

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Swine Health Information Center

Mission

Protect and enhance the health of the US swine herd through
• coordinated global disease monitoring,
• targeted research investments that minimize the impact of future disease threats and
• analysis of swine health data
Swine Health Information Center

Scope of Work

- Swine Disease Matrix project
- Swine health data – analysis and monitoring for trends
- Global swine health and issues identification
- Improve the biosecurity ability of the US swine herd

- Swine Health Monitoring Project (SHMP)
- Risk Analyses
- Secure Pork Supply Database
- Trade Support

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Swine Health Monitoring and Analysis Group

– Assessing foreign, transboundary production disease risk for on-going prioritization of the Swine Disease Matrix.
  • International Intel
  • Scoring card
  • Laboratory

– Oversight of domestic swine health data analysis
  • Advising for the Swine Health Monitoring Project
  • Oversight of projects to monitor domestic diseases and analyze data to support on-farm, prospective producer decision making
Swine Health Preparedness Group

- Oversight of the Swine Disease Matrix research and information
- Advising and oversight of SHIC’s role in the emerging swine diseases response plan
  - Roles and responsibilities of Rapid Response Team deployment
  - Information and analysis necessary to support the appropriate pork producer and pork industry response to emerging swine diseases
Seneca Valley Virus

- SVV has been identified in the U.S. since 1988
- SVV has been associated with lesions that are clinically indistinguishable from FMD. Each discovery of blisters on the nose or hyperemia of the coronary band, hoof pad or interdigital lesions should first be investigated to ensure FMD is ruled out. Often the first clinical sign observed is lameness.
- USDA reported 2 cases of FMD investigation that resulted in SWV diagnosis in 2014. In 2015, 12 have been reported with investigations continuing.
- So far this summer, clinical signs have been found in production and exhibition pigs in HI, OH, AL, GA, NC, IL, IA, MN, FL, CO, OK and SD.
- Historically this has been a low production-consequence virus. The biggest issue has been confusion with a possible FMD infection.
- In the fall of 2014, Brazil started to experience SWV-associated pre-weaning mortality. A cause/effect relationship of the losses with SVV has not been proven, but they are clinically associated. Pre-weaning losses have lasted 2 weeks or more and have resulted in 30 – 70% mortality, especially in 1- to 3-day old piglets.
- This summer SVV has been associated with severe lameness lasting longer than expected on finishing floors and farrowing houses in the U.S. There has also been associated neonatal mortality. The incidence is low but the concern is about this possibly being an emerging syndrome, such as Brazil experienced.

In response, SHIC, NPB, NPPC and AASV have been working together to further define the geographical extent of this summer’s U.S. outbreak and to determine the appropriate response.

Research funded by SHIC

1. With SHIC support, Iowa State University has followed shedding in 10 pigs from a severe finishing floor outbreak. Preliminary results show that pigs persistently shed virus for an extended time after infection.
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Senecavirus A in neonatal pigs

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Frequency of SVV cases reported

Source: 10/16 SHMP

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ISU Submissions SVV Positive

Source: 10/23 ISU VDL

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## Seneca Valley Virus – nonclinical positives

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**Totals**

- Positive/Total Cases: 5 / 441 (1.1%)
- Samples: 25 / 2033 (1.2%)

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Research
• Serial sampling of finishing pigs for duration of shedding
• Serial sampling of sow farms for duration of shedding
• Screen oral fluid samples submitted to ISU and UMN
• Epi surveys on affected farms
• Koch’s Postulates
  – Historical US
  – Contemporary US
  – Brazilian
• Sequencing and characterization of the viruses
• Diagnostics
  – ELISA for serology
• Efficacy of disinfectants
Seneca Valley Virus

Communication and coordination

• Focus on FAD investigations and prevent complacency
• Periodic conference calls started August 7 with variety of SMEs and stakeholders – PED model
• Coordinating research call with VDLs, USDA-NVSL, USDA-FADDL, USDA-RIU, USDA-ARS
• SAHO National Assembly update
• USDA-FSIS
• NPPC’s Packer Processor Industry Council
• SVV Fact Sheet, Update
• AASV’s Swine Health Committee
Seneca Valley Virus

AASV Swine Health Committee

Herd veterinarian roles and responsibilities:

- **Intensive observation** of pigs looking for gross lesions and clinical signs
- Upon encountering a suspect case in finishing pigs or sows, the veterinarian should:
  - **Stay at the site**
  - **Stop all people, vehicular and animal movements**
  - **Call** the state or federal animal disease control officials and follow their instructions.
- Once the disease has been determined to not be an FAD:
  - As with any clinically sick animal, SVV positive animals exhibiting **clinically-active lesions** should not be shipped to slaughter.
  - Once lesions are resolving, communication with the slaughter plant should be initiated before shipping. Communication among the slaughter plant, the Food Safety Inspection Service (FSIS) and the state animal health official will confirm the qualification for accepting the pigs at the plant. FSIS is currently working to determine what documentation may be necessary to verify the pigs have had an FAD investigation with negative results.

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Heads Up

**Novel strain of PRV in Chinese pigs**
- CNS signs in pigs up to finishing age
  - Initial animal exposure trial by APHIS concluded the week of Sept 14
    - Tremors, seizures; respiratory
- Diagnostics
  - Diagnostic test information pending
- Next phase will be vaccine efficacy

**Kubovirus**
- Preweaning enteritis
- In China - close third following PED and rotavirus

**PED**
- Sow immunity questions
- Biosecurity
- Totes and feed

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