



Iowa Pork Industry Center

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Senecavirus A in Swine

Quick Overview:

Senecavirus A (formerly known as Seneca Valley Virus) is a non-enveloped single-stranded RNA virus of the family Picornaviridae. The virus only causes disease in pigs and does not compromise food safety. The ultimate concern is that clinical signs may be clinically indistinguishable from other vesicular diseases which are foreign animal diseases (i.e. foot-and-mouth disease (FMD), vesicular stomatitis, swine vesicular disease and vesicular exanthema of swine). Due to the similarity of clinic signs, a foreign animal disease (FAD) investigation will be initiated to confirm it is not a foreign animal vesicular disease.

- Transmission vectors: Unconfirmed. Potentials include rodents, insects, pigs, trucks, boots, clothing, bovine, humans, other fomites and exhibition swine.
- Incubation period (time from exposure to clinical signs): Unpublished studies, 24 to 48 hours most likely
- Shedding (amount of time pigs can infect other pigs): Preliminary data would indicate it can be from 14 to 21 days in individual pigs, 6-8 weeks at the population level. Animals are most infectious when vesicles are present.
- Disinfectants: A University of Minnesota study found 5% household bleach at 1:20 dilution (6.5 ounces per gallon) and 10-15 minute contact time and Synerize at manufacture label (1:256 dilution) at 60 min contact time was effective at two different temperatures and on a variety of surfaces.

Clinical Signs:

- Vesicles (intact or ruptured) on the snout, in the oral mucosa and feet (just above the hoof wall) (any mucocutaneous junction); may or may not be seen in association with lame pigs
- Acute lameness in a group of pigs
- May see ulcerative lesions on or around the hoof wall
- May see redness or blanching around the coronary bands
- Anorexia, lethargy and/or febrile
- In the early course of the disease, fevers up to 105 degrees F have been reported
- Epidemic transient neonatal mortality, causing increased mortality in piglets of 1-7 days old. Mortality returns to baseline after 4-10 days.

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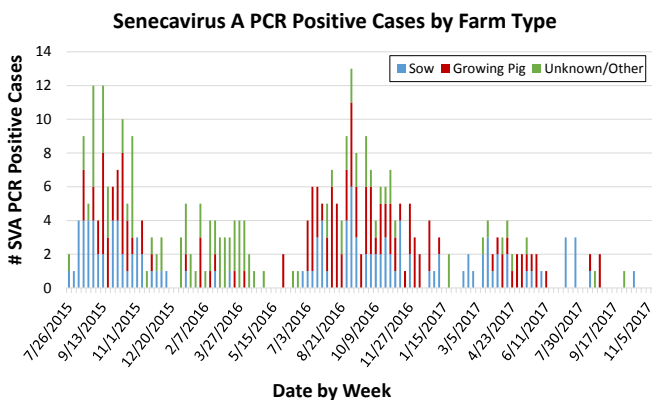
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What to do if you see or are made aware of Clinical Signs?

- Immediately contact your veterinarian who will contact the State/Federal officials
- If your vet is not available, contact the State Veterinarian and/or APHIS Assistant Director (AD)
 - In Iowa – Dave Schmitt (515-281-8601) or Kevin Petersburg (515-284-4140)
- They will decide if a Foreign Animal Disease (FAD) investigation is warranted and how to proceed
- **State and federal officials will determine the next course of action.**

Current Status:

Senecavirus A has been identified in U.S. swine population since 1988, but we are seeing a much higher incidence rate since the summer of 2015. The more recent isolates are similar to Brazilian and Chinese isolates. The graph below is a weekly summary of cases into the ISU VDL. The graph also illustrates the potential seasonality of virus detection over the past 3 years.



Observations by Dr. Rademacher and others (presented at 2016 McKean Swine Disease Conference)

- Senecavirus A clinical signs in grow/finish pigs are usually minor to mild vesicular lesions on snout and/or feet. Lesions are self-resolving (<1-2 weeks) with little, if any, mortality or culls. Typically most cases have been seen near the time of marketing. Frequently non-clinical cases are found by occasional lameness or discovered at a packing plant or buying stations. Be sure to NOT sell any animals to slaughter until all lesions are fully healed.

- Senecavirus A has been described being associated with epidemic transient neonatal mortality in breeding herds. More specifically, cases noted high neonatal morbidity and mortality in piglets up to 4-5 days of age. Piglet mortality resolved within 7 to 10 days. Sows may have the nasal and coronary band lesions, while no lesions have been observed on piglets (except rare cases). Impacts on production: small increase in (2-5%) in %PWM for one week, unless other agents (Clostridium difficile, Rota virus) present may double %PWM. No reports of significant reproductive impact on conception rate, farrowing rate or litter size.

What happens if a Foreign Animal Disease investigation is initiated?

If the regional/state veterinarian identifies clinical signs are related to vesicular disease, an FAD investigation will be started. The pen, barn or site will immediately be quarantined. A regional Iowa Department of Agriculture and Land Stewardship (IDALS) veterinarian will arrive to collect samples and deliver the samples to Ames, Iowa State University (ISU) Vet Diagnostic Lab (VDL). IDALS and ISU expedite testing to provide results. Generally test results are known in 24 to 48 hours.

When tests confirm it is not an FMD event, pigs should remain on-site to heal and recover. Pig movement can proceed when blisters become dry scabs or/and coronary band lesions darken. **Individual pigs need to be monitored to ensure pigs with active clinical signs are not shipped to the packing plant.** If clinical signs are observed at a packing plant, an FAD investigation will be initiated at the packing plant and then traced back to the source farm, where an investigation will ensue.



Senecavirus A Resources

[ISU Veterinary Diagnostic Lab](#)

Swine Health Information Center (SHIC):
- [web link](#) contains 12 final reports (Senecavirus A related) submitted to SHIC.

[“Senecavirus A \(Seneca Valley Virus\) in Swine – Cases at Slaughter Plants \(7-18-16\)”](#)