

Senecavirus A (Seneca Valley Virus) in Swine

Recently, there have been 4 cases of vesicular disease observed in unrelated diagnostic case submissions (3 cases from exhibition swine in Iowa, 1 case from a commercial finishing operation in South Dakota) at the ISU-VDL since July 28, 2015. Foreign animal disease investigations were initiated and samples all tested negative to FMDV, but positive to Senecavirus A. Other vesicular diseases such as swine vesicular disease, vesicular exanthema of swine and vesicular stomatitis, have been ruled out as well.

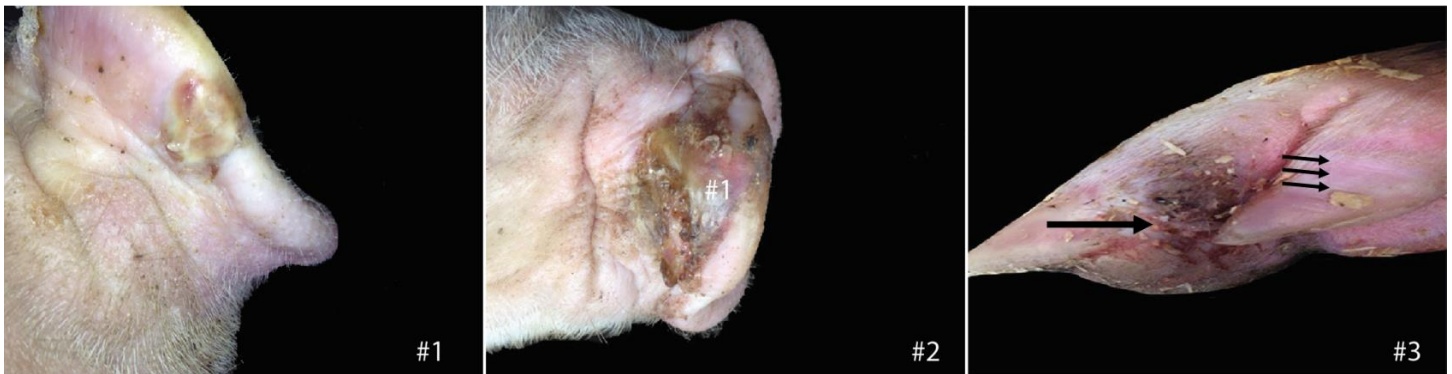
Background

- Senecavirus A is a non-enveloped single-stranded RNA virus of the family *Picornaviridae*. Foot and Mouth Disease Virus (FMDV) and swine vesicular disease virus (SVDV) is also a member of this same viral family.
- This type of infection in swine resulting in snout and coronary band vesicles has also been termed idiopathic vesicular disease in swine.
- Disease has been reported in the United States, Canada, Australia, Italy, New Zealand and most recently in Brazil. Farm outbreaks in the United States are sporadic (less than 20 have occurred in the last 3 decades), but have been recognized in multiple regions.
- In the last 5 years and prior to these recent outbreaks, Senecavirus A has been found in North Carolina and Illinois.
 - Senecavirus A has been identified in swine cases from California, Illinois, Iowa, Louisiana, Minnesota, New Jersey, and North Carolina between 1988 and 2001.

Clinical Presentation:

The following are clinical signs that may or may not be present in each case:

- Vesicles (intact or ruptured) on the snout or in the oral mucosa (any muco-cutaneous junction)
 - Figures 1 and 2
- Acute lameness in a group of pigs. (Up to 50-60% of finishing pigs in one case report)
 - May see redness or blanching around the coronary bands (Figure 3 – 3 small arrows)
 - May see ulcerative lesions on or around the hoof wall. (Figure 3 – 1 large arrow)
- Anorexia, lethargy and/or febrile
 - In the early course of the disease, fevers up to 105 degrees F have been reported.



Photos courtesy of: AJ Smit (#1 and #2) and Aubrey Cordray (#3)

What to do if you see or are made aware of clinical signs similar to this?

- Immediately contact the State Veterinarian and/or the USDA APHIS Assistant District Director responsible for your state or region.

- IA – 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.
- Temporarily halt any movements from the farm until directed by State and Federal Authorities.

Samples to collect (In order of best samples to collect listed at the top):

- Vesicular fluid (aspirated with small gauge needle and syringe) and transfer to Falcon tube
- Dacron/Polyester (non-cotton) Swabs from erupted vesicles
 - Placed in 1-2 ml of PBS or Sterile Saline
- Skin scrapings (with scalpel blade) around erosion margin or around blanched coronary bands
 - Placed in 1-2 ml of PBS or Sterile Saline
- Nasal swabs or Oral Swabs (buccal swabs – around lesion if present)
 - Place in 1 ml of PBS or Sterile Saline
- If post-mortem samples are collected, then get fresh and fixed tissues
 - Any lesion
 - Regional lymph nodes
 - Spleen
 - Liver
 - Lungs
 - Kidney
 - Heart
 - Tonsil
 - Brain and Spinal Cord (if possible)
- If FAD investigation is ordered, then additional samples will have to be collected
 - Red top
 - Purple top
 - Green top

Date: 8/5/15

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