

# Senecavirus A Infections in Swine

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Any swine having vesicular lesions are suspects for foreign animal diseases (FADs), such as foot-and-mouth disease (FMD), swine vesicular disease (SVD), and vesicular stomatitis (VS) virus. Testing done by the USDA, National Veterinary Services Laboratories (NVSL), Foreign Animal Disease Diagnostic Laboratory (FADDL), and authorized testing at the California Animal Health and Food Safety (CAHFS) laboratories is performed on samples from these animals to rule out FAD.

Senecavirus A (SVA), commonly known as Seneca Valley virus, is another virus that can cause vesicular lesions in swine. It belongs to the same family (Picornaviridae) as FMD and vesicular manifestation of SVA infection is indistinguishable from FMD without diagnostic testing.

Although SVA is not a FAD, since this virus mimics lesions of FAD vesicular diseases in pigs, SVA was added to the California "List of Reportable Conditions for Animals and Animal Products" in the Emergency Conditions column. Any diagnosed or suspected cases of vesicular disease must be reported immediately to CDFA/USDA to ensure rapid detection of trade-impacting FADs such as FMD to protect the health, quality, public confidence, and marketability of our nation's livestock and products.

In 2016, one case of SVA was diagnosed as the cause of snout vesicles on four pigs in a group of 180 out-of-state market hogs at a federally inspected slaughter facility in California.

Since January 2017, CDFA, Animal Health Branch, and USDA have conducted 60 FAD investigations in slaughter swine exhibiting signs of vesicular disease from which samples were tested at the CAHFS laboratory for SVD and FMD. All of the samples tested were positive for SVA and negative for FMD using polymerase chain reaction testing. Confirmatory testing conducted at NVSL have been negative for FADs, to date.

The number of SVA cases have been increasing in states in the Midwest in 2017, initiating numerous FAD investigations, nationally. In addition, the large number of FAD investigations in California slaughter establishments have been conducted on loads of swine originating from "sorting stations" or brokered pigs from numerous Midwest states. The stress of commingling pigs and hauling them long distances may contribute to the high morbidity (some approaching 80 percent) seen in many of those shipments.

In some recent reported cases, swine herds approached 80 percent morbidity, with snout and coronary band vesicular lesions. In other cases, only five percent to 10 percent of animals are affected. Often veterinarians report pigs are afebrile and are bright, alert, and responsive, however some also report anorexia, lethargy, and/or febrile (in the early course of disease, fevers up to 105° F have been reported), and some have reported mortality in pre-weaned pigs.

Vesicles generally appear on the snout (Figure 1) and coronary band



Figure 1: Ruptured snout vesicle



Figure 2: Intact coronary band vesicle



Figure 3: Ulcerative coronary band lesion

(Figure 2). These vesicles rupture quickly, leaving an erosion. Although the snout lesions do not generally affect behavior, the foot lesions (Figure 3) may result in moderate to severe lameness, and eventual sloughing of the hoof wall on more than one leg. The virus can spread through direct contact with infected pigs through contact with fomites such as boots, brushes, or other equipment.

**Cases presenting similarly to SVA must be treated as potential FADs, necessitating the following activities:**

Herd Veterinarian	Producer
<ul style="list-style-type: none"> <li>• Intensive observation of animals for gross lesions and clinical signs</li> <li>• Upon encountering a suspect case, the veterinarian should:               <ul style="list-style-type: none"> <li>○ Stay at the site and enhance biosecurity practices</li> <li>○ Report to CDFA/USDA and follow instructions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Do not move animals which are ill or exhibiting clinical signs including clinically active lesions</li> <li>• Document movements leading up to and immediately surrounding the onset of clinical signs (as the information may be useful on disease analysis or for a FAD investigation)</li> <li>• Cooperate with sample collection and submission as part of a FAD investigation under the direction of CDFA/USDA</li> </ul>

Updated information on swine emerging diseases is available from the Swine Health Information Center at: <http://www.swinehealth.org/emerging-disease-information/> or <http://vetmed.iastate.edu/diagnostic-lab.> ■











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