

Season 3, Episode 5: Actinobacillus Pleuropneumoniae (APP) Outbreaks and Prevention

Dr. Derald Holtkamp, Iowa State University, and Dr. Marcelo Almeida, Iowa State University, discuss their research around APP, give insight to what could have caused the 2021 outbreak in Iowa and relay what swine producers should be doing to protect their animals.



Definition and history

Actinobacillus Pleuropneumoniae (APP) is a bacteria which causes respiratory disease. Infected animals often display necro hemorrhagic areas in the lungs. APP is nothing new to the swine industry, there are currently 19 serotypes described throughout the world. In the 1980s APP was very common, however in the last 10 years there have only been 70 to 75 cases per year discovered by the Iowa State University Veterinary Diagnostic Laboratory (ISU VDL). Overall, APP is considered a bacteria whose serotypes do not change as rapidly compared to other viruses and bacteria.

Recent outbreak

APP serotype 15 was identified as early as 2010 at the ISU VDL. In most cases, it is not known to cause severe disease and mortality. In December 2021 and January 2022 that changed, when several cases of APP were being diagnosed by the ISU VDL. Interestingly, all cases were within a 20-mile radius of one another throughout Central Iowa. Within a two-month period 20 cases of APP were diagnosed in this geographic region. During the 2021 and early 2022 outbreak, infected herds were experiencing up to 50 percent mortality within one week. In total, 13 companies were impacted by this APP outbreak. Luckily, APP is susceptible to heat and with warmer weather the cases diminished.

Transmission

Transmission of APP can occur from one animal to animal or through fomite routes. Fomites include vehicles and equipment that can carry the disease. ISU VDL investigated transmission routes for 7 out of the 20 APP cases. Rendering activity ranked fairly high. Other possible routes included market transport and employee activity. Stress events, such as power outages or animal movement, have also been known to leave herds more susceptible to disease. At the conclusion of their investigation, rendering was still at the top of the list. Several facilities where outbreaks occurred all utilize the same rendering service, which operates on a route system within a single geographic region. Unfortunately, exact rendering routes were not able to be further explored.

Biosecurity

What can you do to protect your herd? Grow-finish biosecurity is often lacking and is one area where significant biosecurity improvements could be made. Most facilities operate on an open production system where feed, people and animals are constantly moving in or out. This open system leaves an operation vulnerable to disease. Utilizing third party or contracted services can be lower in cost, but it can also open a black box that a producer has no control over. If you are currently utilizing a rendering service, start with a hazard analysis of this activity. Examine every step of the process and what your operation can do to reduce the risk of bringing anything back in to your facility after disposing of mortality. If you see lesions consistent with APP it is important to send samples to the lab in order to understand the specific strain you are dealing with and possible modes of transmission.

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