



Bethany Swine Health Services

Porcine Epidemic Diarrhea Virus (PEDv)

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Looking ahead: What the upcoming year means for PED:

In May of 2013 Porcine Epidemic Diarrhea Virus (PEDv) was confirmed for the first time on US soil. PEDv is a coronavirus, similar to Transmissible Gastro Enteritis virus (TGEv). Farms that have contracted PEDv have suffered from severe diarrhea and a high mortality rate (as high as 100% in pre-weaned piglets). PEDv, much like its relative TGEv, causes concern through the industry not only because of the immediate effects of high death loss, but also due to the lack of a current vaccine, the waning of immunity of a previously exposed herd (allowing for re-breaks to occur) and the heavy viral load shed into the environment by infected animals.

Cleaning up a PED Positive Farm:

The swine community has taken initiative to begin to understand this virus better, in order to provide better management techniques for farms attempting to remain PEDv naïve as well as farms that are beginning to return to PEDv negative status: this process is sometimes referred to as “cleaning up.” All of these terms can become confusing quite quickly. Cleaning up a farm has two goals:

1. Reduce the viral load on the farm
2. Remove ALL virus from the farm

To clean anything that is PEDv-infected, utilize a Disinfect-Wash-Inspect-Rewash-Whitewash-Dry system.

1. Use a foaming disinfectant on all areas before washing. This breaks down the biofilms to make washing easier and decreases the viral load that gets spread around during powerwashing.
2. Powerwash all areas thoroughly.
3. Inspect after washing. Inspection should involve a flashlight and screwdriver to inspect corners and hard to see areas. Marking areas to rewash with sidewalk chalk is useful for a visual aid.
4. Rewash, as necessary

5. Disinfect, using whitewash
6. Dry using torpedo heaters



By completing these steps not only have you physically removed the virus, but you have also created an environment that it is unable to survive in. Completing these steps as thoroughly as possible is important because PEDv can survive at room temperature for up to 14 days and that at various temperatures of 40, 50 and 60 °C it will survive for up to 7 days (*Goyal et. al, 2014*). It is essential that the cleaning methods are followed with great care to rid the farm of PEDv.

Sow farms follow even more stringent disinfecting and washing procedures. In addition, farms are utilizing a modified McRebel program that should limit spread within the farm.

With these and other procedures in place, sow farms are returning to normal production within 6-8 weeks, and beginning to test negative by 12 weeks.

Testing Requirements for Farms:

After the farm has completed the clean up following the initial break, it will begin testing to ensure that it is in fact negative. This will be particularly important for sow farms, as they will not receive any gilts onto the farm

until testing confirms negative status: to prevent a re-break of PEDv from introducing naïve animals into the herd. What is important to remember is that PEDv is a strong virus that can survive in the environment better than other viruses we commonly deal with. Therefore, when testing we will not only be testing the animals, but also testing the environment to make sure that it has been adequately cleaned = meaning no remnant of the virus is hiding anywhere to infect naïve animals.

Testing begins at 60 days post-infection, and begins with testing wean pigs, similar to PRRSv clean-up testing; however, because PEDv is largely fecal-oral transmission, the best way to detect the virus is to utilize a Swiffer test. This involves taking a Swiffer pad, wetting it with solution, wiping an area/pig, wetting the Swiffer again, and collecting the fluid, similar to an oral fluid collection.



Farms are also testing the environment to see where virus might be hiding that could be a source of reinfection. Doorknobs, employee gloves, corners of crates, semen coolers, break room tables, syringes; nothing is off limits, and serves as a bold reminder to employees of the need for strict sanitation.

Nursery/Finisher Testing:

The Nursery/Finisher sites receiving pigs from a PEDv positive sow farm are advised to continue testing for 8 weeks after a sow farm begins achieving consistently negative swiffer tests. Nursery samples, either oral fluid or fecal samples, are tested to confirm the sow farm is weaning negative pigs. Nurseries can serve as vessels for virus to multiply. If a small percentage of positive pigs are leaving the sow farm, nursery sampling should pick up this shedding.

Nurseries or finishers that became infected, irrespective of a sow farm, need to go through the same cleanup procedures as a sow farm. Once new pigs enter the site, the farm cannot change to a negative PEDv status until they have two negative testings of both oral fluid and/or serum antibodies spaced one month apart, as well as an absence of any clinical signs on the site.

USDA/APHIS Reporting Mandate:

In response to the introduction of PEDv into the United States the USDA and APHIS (Animal Plant Health Inspection Service) has now implemented a reporting program for sites that are confirmed PEDv positive or Delta Corona virus positive. Any farm testing positive will be reported to USDA/APHIS by the diagnostic laboratory. Here is a summary of what they are going to require of the farms.

Once PEDv or Delta Corona Virus, they are calling them SECD: Swine Enteric Corona Virus, is confirmed positive, the site must produce within 45 days of the confirmed positive status a Herd Management Plan, and that plan must be submitted to APHIS. The purpose of the Herd Management Plan is to have a producer work with their veterinarian to develop biosecurity protocols that use industry standards that prevent the spread of SECD.

These measures are an attempt to stop the spread of these virus and lessen their effects on the swine industry. However, because this is a new initiative, there are still a lot of bugs to be worked out of the system. At this time, the only thing being reported is the Premise ID of a site via the diagnostic laboratory, and the contact information of the veterinarian that will serve as the point of contact for any additional questions.

Vaccine Update:

There has been much debate over whether or not there is currently a vaccine for PEDv on the market. Harris Vaccines has marketed the “iPED” vaccine. This vaccine has not had all the tests completed to determine its effectiveness and it is also currently being distributed only to herds that have already been INFECTED. As of right now, there is not a solid vaccine for herds that are completely naïve to the virus, and it does not seem likely that there will be one before this fall. Therefore, everyone needs to be prepared for another winter season with PEDv.

Welcome to Brigitte Mason!



Brigitte is a third year veterinary student from the University of Illinois. Brigitte completed her undergraduate work at Southern Illinois University, and has had experience with several swine systems, including Murphy Brown. She will be working on some vaccination program projects on the sow farms, as well as antibiotic surveys and other diagnostic projects.