

FACT SHEET: Porcine Epidemic Diarrhea Virus (PEDV)

PEDV infection was confirmed in the US on May 17, 2013. This is the first known presence of this virus in the US. There was a reported case in Canada in the 1980s, but nothing in the recent past.

- PEDV was first diagnosed in Great Britain in 1971. The virus is endemic in Asia.
- PED is not a World Organization for Animal Health (OIE) reportable disease so doesn't affect exports.
- PEDV only infects pigs. PEDV is not a zoonotic so will not infect humans, and no food safety concerns.
- PEDV causes enteric disease in swine similar to transmissible gastroenteritis virus (TGEV). This virus appears to be more severe. Both viruses are Coronaviruses but the diagnostic test designed to detect TGE will not detect PEDV. A new pcr test has been developed and is in use at laboratories. The index case occurred in Iowa on April 29, 2013.
- The incubation period is very short. Once infected, clinical signs of severe diarrhea and vomiting can be seen in 24-48 hours, commonly 2-4 days at the herd level. Groups will shed virus for several weeks.
- The virus will cause clinical signs in swine of all ages. Older animals will recover. Mortality in piglets (< 14 days of age) from a naïve herd will range from 30-100%. This virus appears to be particularly pathogenic with losses in young pigs approaching 100% in most cases.
- PEDV is transmitted more typically by the **oral fecal** route. The most common sources of infected feces are pigs, boots, trucks, clothing, or other fomites. While there have been reported some (+) samples of tested feed, it is unclear whether that material is infective.

- Based on sequencing, the virus is >99% similar to the China PED virus. Vitamin and trace minerals from China being added to feed is being considered as a possible route of introduction to the U.S.
- Reinforcing quality biosecurity protocols on farms and for transportation is critical to preventing transmission of the virus to new groups of pigs.

Area Experiences with PEDv infections:

- Growing pig sites –
Outbreaks have occurred soon after marketing a load of pigs from the site.
- Sow farms –
The breaks have again come after a transportation event – removing cull sows or weaned pigs – and so presumably a contaminated trailers problem. Farms sharing equipment have an increased risk too.
- Observations –
Growing pigs will have mild to severe watery diarrhea, and no or little mortality. It is possible to have barns affected and not realize that it is PEDv! That may partly explain why the problem has increased in the U.S. so quickly.

Biosecurity Actions for Farms:

- Observe clean/dirty lines at doors and entries. When one is available, use the barn entry room to help eliminate outside material getting into the barn. Barn boots stepping outside the barn is a risk.
- Clean, Dry, and Disinfect are your best friends, Systems with the TADD (thermal assisted drying) have had a very good track record of preventing PEDv.
- Insist on trailers that are clean and inspect them before allowing them to back up to the barn. Even with clean trailers, treat them as though they are contaminated. Only an extremely small amount of virus is necessary to infect pigs.

- Do NOT allow the trucker to walk onto your chute or in the barn
- Do NOT allow yourself or other farm staff to walk onto the trailer either.
- Have gating or stops in place so that pigs do not come back off the trailer onto the chute or into the barn. If that happens then take action to contain the contamination to the chute only or to that load-out room only – so don't spread it back into the farm any further. Move the pigs onto the trailer, and people should exit to the outside. The chute or room should be cleaned, dried, and disinfected before "opening" it up to normal flow.
- After selling or loading out pigs, clean and disinfect the load-out room and/or chute, and the equipment and boots used by farm staff.
- Receive new pigs into a barn with clean boots, coveralls, and equipment.
- In cold weather disinfectant should be applied in windshield washer fluid rather than water so that adequate kill time is observed --- FROZEN ≠ DRY. Disinfectant powder (Traffic Cop) is helpful too.
- Feed deliveries – cross foot traffic is a risk for any vehicles going to multiple sites and for people between vehicles and the barns.

Disposable boots can be pulled on as the driver exits the vehicle to walk on the site, then pulled off inside/out and disposed into a garbage bag in the cab.

It is recommended that the farm/barn staff manage the feed bins – open/close the covers so that feed delivery personnel do not need to walk close to the bins.

Order the feed deliveries to visit "clean" sites earlier in the week and day.

- Communicate on the farm with each other, if status of a barn/site changes let people know.
- Assume virus will stay alive through the winter environment, outside and in pits.
- Removal of mortalities – compost and rendering options need to minimize risk of cross traffic.
- Clean, dry, and disinfect interiors of farm vehicles often to avoid it becoming a reservoir of virus.
- Don't set supplies on the floor of vehicle or ground to avoid contamination.

Products Available & Items Most Effective

- Disinfectants – Synergize, Virkon-S, TekTrol, Chlorine Bleach, Traffic Cop powder
- Windshield washer fluid to keep disinfectant from freezing so there is adequate kill time
- Disposable boots, available with gripper/tread on bottom for winter
- Disposable coveralls & disposable gloves
- Mats at entry to office or barn – electric heat mat, disinfectant mat, mat with edge and powder