

PDCoV Monitoring

**There were 0 breaks this week (1/29/2015) with 19 of 26 systems reporting.
There were 10 retrospective herd breaks , ranging from November 2015 to January 2016.**

Porcine Delta coronavirus: a case report Investigated by Dr. Deb Murray, New Fashion Pork



Key Points

- This case report describes an epidemic of Porcine Delta coronavirus infecting 46 sites at the time of this writing.
- Contaminated feed was the potential source of initial virus introduction identified in the investigation. Lateral movement via personnel, as well as transportation vehicles did account for further viral spread subsequent to the initial breaks.

New Fashion Pork (NFP) is a leading producer of high quality pork with operations in Minnesota, Indiana, Iowa, Illinois, South Dakota, and Wyoming. Dr. Deb Murray is the staff veterinarian. NFP did have sites infected with Porcine Epidemic Diarrhea virus in the original national epidemic but pursued a strategy of elimination on all infected sites. Through the fall months of 2015 previously infected sites continued to be cleaned up and naive pigs were placed into these sites which then remained negative after placement. In late 2015 there were 6 remaining sites which were in the process of completing their current finishing turn and were still considered positive, all other sites in the company were all considered negative at that time. The initial source of infection of these 6 sites was thought to be contaminated transportation, with subsequent lateral movement by personnel. On day -12, a site with pigs in the nursery stage was infected with no obvious source. The feed bin which feeds the site tested PEDv PCR positive with a Ct of 39. The feed sample was also PCR positive (Ct 33) for rotavirus.

On day 0 of the epidemic, Dr. Murray began the day receiving reports of diarrhea at several finishing sites. This was unusual as most were not close to marketing. By day's end, there were 17 sites reported as having clinical signs consistent with PED or Delta Corona virus across 7 sow flows. Over the ensuing 2 weeks, 29 more sites became infected, again most not close to marketing.

Upon investigation, it was revealed that 42/46 sites that were infected during the outbreak received feed from one feed mill. This mill provided feed to 50 sites, indicating that 84% of the sites fed out of this mill became infected. While some of these may have been caused by contaminated transport at marketing, 27 / 40 (68%) growing pig sites were in early/mid finishing. Also a sow farm and neighboring GDU were infected. Of the 42 infected sites, 30 were confirmed positive with Delta Coronavirus, 4 were confirmed PED virus positive and 8 were both.

The feed mill was investigated and it was confirmed that no animal by-products were included in any of the diets being prepared at the mill. Samples were collected and PCR tested for PEDv and Delta Corona virus.

Day	# of Samples	Sample Location	Result
4	10	Environmental (9), complete feed (1), Ingredient (1) at the feed mill	All negative
5	10	Bins feeding the sow farm (9), Bin feeding the GDU (1)	All negative
6	12	Ingredient testing at the feed mill	All negative
7+	26	Bins feeding positive growing pig sites	1-PED suspect positive (39 Ct), 4 Delta positive (34 Ct, 34 Ct, 34 Ct, 37 Ct), 21 negative

Other than contaminated feed, no other likely sources of virus were discovered in the investigation of the initial break. Virus elimination will be pursued for all sites.

Please contact me if you have a case investigation that you would like to share.
Bob Morrison BobM@UMN.Edu; 612-850-0019