

## Delta Coronavirus Update

**Key Point:**

- Next week, we will start collecting incidence of Porcine Delta Coronavirus.

We are hearing reports of increased incidence of Porcine Delta Coronavirus (PDCoV). One veterinarian described a case to me today where they had 17 sites report clinical signs last week – **on one day** (stay tuned for an upcoming case report describing the outbreak). You may have noticed that we stopped collecting incidence of PDCoV over a year ago due to extremely few cases being reported. One can argue that since the disease is relatively mild, we don't need to track its incidence. But similar to tracking Seneca Valley virus, perhaps we can learn something and improve our biosecurity by sharing incidence data.

So, beginning next week, we will be asking for your cases of Delta. Let's start by collecting all your cases dating back to the beginning of our pathogen year; July 1, 2015.

Also, even though the disease is relatively mild, we are going to collect some production and diagnostic records and quantify the production loss and time to stability. Once we know who has cases, we will be contacting you individually to ask for your participation.

As always, we appreciate your ongoing support and welcome your comments, questions and suggestions.

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## Characterization of Viral Load, Viability and Persistence of Influenza A Virus in Air and on Surfaces in Swine Production Facilities

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**Key points**

- During outbreaks of influenza virus in swine farms, aerosols and surfaces in barns contain significant levels of virus representing a potential exposure hazard to both the pigs and people.
- Consider implementing biosecurity measures that prevent the mechanical transfer of influenza virus via fomites and people within infected facilities
- We can decrease exposure to people during outbreaks of influenza by wearing N-95 face masks.

Influenza continues to be a significant problem in swine production. We have been conducting research to understand influenza transmission and dynamics of infection in swine farms with the goal to provide guidelines to effectively control and perhaps eliminate influenza virus from farms. In this study we report the viral load, viability and persistence of influenza virus in air and on surfaces of swine production facilities.

Results of our recent field studies:

- Influenza virus can be isolated from the air inside farms having acutely infected pigs.
- All three common subtypes H1N1, H1N2 and H3N2 can be isolated from the air.
  - We detected virus in air for approximately 20 days after reported onset of clinical signs with maximum levels between 7 and 11 days.
  - We estimated the average quantity of virus to be  $2 \times 10^5$  RNA copies/m<sup>3</sup> of air.
- Influenza can also be detected on surfaces in the farm.
- We detected a significant positive correlation between the count of oral fluid positive samples and detection in air (0.69,  $p < 0.001$ ), between oral fluids and surfaces (0.47,  $p = 0.009$ ) and between air and surfaces (0.42,  $p = 0.01$ ).

For details on the study: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0146616>

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**Fig 1. Modeled influenza A virus quantity (RNA copies/m<sup>3</sup>) in indoor air.**

