

## Actinobacillus pleuropneumoniae: a case of suspected lateral transmission (Part 1: Outbreak Investigation)

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### Key Points

- Communication between veterinarians and farm managers can help unravel patterns that might seem unique in one system.
- Even though the source of APP was not determined outbreak investigation can help to find common links between sources.

A series of *Actinobacillus pleuropneumoniae* (APP) outbreaks involving five farms belonging to three different production companies were reported. Serotype 8 was confirmed as the source of the clinical signs in all the cases. The outbreak started with the two southernmost located farms (Company A Farm 1 and Company B Farm), followed by Company C (Farm 1) four weeks later. The distance among these growing pig sites ranged from 0.6 to 8.3 miles (Table 1) and the region where they are located can be considered as a high hog density area (Picture 1).

Although an exact cause of transmission of APP into these finishing sites was not determined, common links between several sites were revealed after conversations among veterinarians and production managers. It is known that the main transmission route for this bacterium is by introducing APP carrier pigs which in this case can be easily ruled out as these are sites that flow independently. Other possibilities include indirect transmission through fomites and aerosol. Although these production companies do not share employees or tools they do have a common link in that some did share the same rendering company which could have been servicing other sites that were APP positive. As for manure removal, companies do not use the same manure removal company. One company did have the same individual doing the manure removal procedure at one site while breaking and then proceeded to the next one. Airborne transmission has been suggested as another possibility and after preliminary wind direction analyses during the outbreak dates it was inconclusive.

Even though APP may not be on the radar for many, this case study demonstrates that this bacterial pathogen is a contributor to swine respiratory disease and it can become a source of economic losses in a short period of time. Through prompt communication between veterinarians and production managers it was understood that these cases were not isolated as there were several reports of rapid increase of APP associated mortality in the region. The veterinarians were then able to better understand and respond to the disease.

	A 1	A 2	B	C 1	C 2
A 1		5.5	2.9	0.6	1.7
A 2			8.3	4.2	4.8
B				3.5	4.1
C 1					1.2
C 2					

Table 1. (Above) Distance (miles) among five growing pig sites from 5 different production systems involved in an *Actinobacillus pleuropneumoniae* outbreak in fall 2017. Letter describes the Company (A,B or C) and number describes the farm (1 or 2) as labeled in the map.

Picture 1. (Right) Map of farms involved in an *Actinobacillus pleuropneumoniae* outbreak in fall 2017.

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