

BBD-OP-01

TITLE

SPATIAL SPREAD OF *M. HYOPNEUMONIAE* IN A WEAN-TO-FINISH BARN.

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⁶ *IDEXX*

CONTENT

Slow transmission of *M. hyopneumoniae* (Mhp) and lack of sensitive diagnostics hinders early detection in negative swine populations and elimination programs. The objective was to assess the between-pen transmission in a commercial wean-to-finish population. Study completed in one room of a wean-to-finish site (1250-head) and 46 pens housing 28 pigs. Room stocked with 21 day-old Mhp negative barrows. At 9 weeks old, a central pen was selected and 10 seeders were inoculated with Mhp lung homogenate. The remaining 19 pigs served as contact pigs. Serum (SS), tracheal swabs (TS) and oral fluids (OF) collected weekly from all pigs in inoculated pen. A total of 4 SS, 1 TS and 1 OF were collected from the 45 contact pens biweekly after inoculation through marketing. Five SOMO+ Respiratory Distress Monitor devices were installed in the room. Seven dpi 10/10 seeders were TS PCR+ and by 42 dpi 100%ELISA+. At 24 dpi all contacts were TS PCR+ and at 56 dpi 17/19 tested ELISA+. At 24, 56, 84 dpi, 2%, 64% and 100% of contact pens were TS PCR+, respectively. The first 35 dpi OF were PCR- in the inoculated pen. Highest detection was at 98 dpi with 68% of OF PCR+. At 56, 81 and 98 dpi 13%, 71% and 98% of pens were ELISA+, respectively. Mhp infection in contact pens was first established downwind from the inoculated pen and over 70 days spread to all pens. Respiratory Distress Index alerts occurred at time points that coincided with TS+ and clinical detection of cough. Models will be carried out to generate estimates of the probability of detection by sample size and type, and within-barn prevalence. A combination of population based serology, clinical signs and TS will be part of novel protocols for sampling negative populations and measure exposure in gilt acclimation protocols.