Project Update: Effect of the EPI® technology on decreasing PRRS, influenza and PED viruses in aerosols from experimentally infected pigs

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Background
• There is a need to validate technologies to minimize the spread of pathogens from infected farms
• There are air sanitation technologies that have the potential to decrease the load of viruses found in the air of infected farms
• The electrostatic particle ionization (EPI®) technology, patented as a dust reducer, was tested to evaluate its impact on airborne virus reduction

Objectives
To quantify the impact of the EPI technology at removing PRRS, influenza and PED viruses from aerosols generated by experimentally infected pigs

Methods
• Twelve 6-week-old pigs were inoculated with H1N1 IAV, 1-8-4 PRRSV and PEDV and air samples were collected for 24 days
• Total airborne particles, total airborne viruses and virus particles as a function of size were measured with the EPI system on and off.
• The removal efficiency of the EPI system for IAV, PRRSV and PEDV was calculated
Results

The EPI system has the potential to reduce the spread of pathogens from infected sites.

Conclusions

- The EPI system was effective at reducing influenza, PRRSV and PEDV from the air.
- There was a reduction of 1 to 2 logs of viral particles from the air and this reduction was influenced by virus type.
- There was a higher efficiency of the EPI technology at removing larger particles.

Implications

- The EPI system has the potential to reduce the spread of pathogens from infected sites.