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How we deal with Swine Influenza Virus in a multisite production system

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Swine Influenza Virus (SIV) has continued to plague the growing pig and negate profitability. Our system veterinarian determined the cost of SIV in this system to be $10.31 per pig with $3.75 in veterinary related costs and $6.56 in loss of performance including mortality, decreases in ADG and F/C (Donovan, Leman 2005). Considering this substantial impact on profit, we have tried several strategies to combat SIV in our system with varied results. This presentation will review the most recent strategy using partial depopulation of the nursery system to decrease the prevalence of SIV in the population. A second strategy of reducing the overall concentration and number of nursery pigs with the below described multisite system is being considered should the partial depopulation of the nurseries prove unsuccessful. This would be accomplished through the increased use of wean to finish facilities within this system.

Description of the pig flow

A traditional nursery and finisher multisite system with 10,000 head nurseries and 10,000 head finishers. Facilities within the system are located very near each other with the average distance less than 1/2 mile from each 10,000 head site. For a macro view, there are 75,000 pigs from 3-9 weeks of age within 1 square mile. There are 3 sow farms that flow into this system. The 10,000 head sites are single-sourced and run continuous flow. This flow strategy was adopted in 2004 as a PRRS control measure. Health of the system is Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) positive with 2 sow farms in the "stable for >6mos but < than 2 years" category and 1 farm in the "positive/active" category. The farms are *Mycoplasma hyopneumoniae* positive. Diagnostics are routinely conducted in the nursery for SIV which consist of nasal swabs from clinical pigs and typing, sequencing, and rapid SN testing performed on the positive samples. New strains of Swine Influenza into the system spread rapidly to all 8- nursery sites and similar isolates can be found in any 10,000 head site. Swine Influenza has become endemic in the nursery system and causes a number of problems with secondary infections.

Strategy for control

Understanding that a continuous pig-flow strategy is predicating the endemic SIV, we have planned a partial depopulation of the sites to break the cycle. Due to the dynamics of pig flow, every summer we would send >10,000 pigs outside of the system as feeder pigs to allow the remaining pigs to be housed for additional time to compensate for the decrease in growth rate from summer heat. Since pigs were already leaving the system, we decided to take advantage of this timing to send the pigs as weaners and leave the nurseries empty for one turn. This allowed us to clean, disinfect, and perform additional maintenance to the sites prior to receiving incoming pigs on the following turn. The transportation difference in cost of moving a weaned pig vs. a feeder pig along with improved feed costs in the upper Midwest created an economically feasible opportunity to complete this project at minimal cost.

Prior to the "depopulation" we started a vaccination program in the sow herd to boost maternal antibody for SIV. We did comprehensive surveillance of the nurseries attempting to isolate the most current strains of SIV circulating. Using these isolates, we formulated an autogenous vaccine and mass vaccinated the sow herds with a priming dose followed by a booster 4 weeks later. 3 weeks after the last booster, we started weaning the pigs into the clean depopulated nurseries. To further control bacterial pathogens that plagued the nursery health, we medicated the lactation diets with Denegard/CTC.

We are currently refilling the sites and the oldest pigs are 6 weeks post nursery placement. Subjective observations of clinical signs for SIV seem to show a favorable outcome from our strategy. More results will be available at the time of the Leman conference

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