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SDEC Partners Research Update

Project Update: Time to produce PRRSv-negative pigs from infected breeding sites

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Background

- PRRSv continues to cause significant pig production losses in North America and around the world.
- It has been reported different options to control and eliminate PRRSv from infected breeding herds, including “herd closure”.
- It has become a common practice in the US swine industry to combine herd closure with whole-herd immunization with either modified-live virus vaccine (MLV) or with the virulent resident virus inoculation.
- To our knowledge, there is no scientific data on effectiveness of different immunization protocols to produce PRRSv-negative piglets from PRRSv-positive sources.

Objective

The purpose of this study was to determine if whole-herd exposure methods (attenuated virus vs. live-virus inoculation) and herd characteristics were associated with time to produce PRRSv-negative piglets at weaning (TTNP).

Results

- The distribution of TTNP ranged from 12 to 43 weeks and had a median of 27 weeks. This timing is longer than we anticipated given previous reports in the literature (Rowland and Morrison, 2012; Torremorell, 2011; Yeske, 2009; Zimmerman et al., 2012).
- At the time of this writing, LVI herds had significantly shorter TTNP (~25 weeks) than MLV herds (~33.0 weeks). A limitation of this study is that herds were not randomly allocated to the exposure type and these results may be confounded.
- Herds with prior PRRSv immunity had median TTNP that was 9 weeks shorter than those without PRRSv immunity (p-value 0.0099). RFLP pattern and herd sizes were not statistically associated with shorter or longer TTNP.
- Data from this study suggest that PRRSv monitoring must be done repeatedly over time to assess the PRRSv negative status of a herd throughout an elimination program. From 60 farms, 21 farms had at least 1 month of PRRSv PCR-negative results followed by positive PCR results. Farms that had at least two consecutive PCR-negative results followed by PCR-positive submitted samples for genetic analysis of PRRSv and obtained sequences similar to the original resident virus, concluding that in those instances a lateral PRRSv infection was not the case.

Conclusions

- TTNP was shorter in herds that had prior PRRSv infection (last 3 years).
- TTNP was shorter in herds that used LVI compared to those that used MLV.
- Data from this study suggest that PRRSv monitoring must be done repeatedly over time to assess the PRRSv negative status of a herd throughout an elimination program.

Implications

- In summary, there is significant variability in the time it takes for herds to produce negative pigs. Therefore veterinarians need to take these results into account when planning herd closure elimination programs. Further research is needed to determine the factors that contribute to PRRSv negative pig production from infected farms.