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SDEC Partners Research Update

Project Update: Association of herd-closure practices with PRRSv-elimination from breeding herds

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Background:



PRRSv status terminology for breeding herds undergoing PRRSv-elimination:

I – positive

IIa – positive with ongoing control/elimination project

IIb – “stable” = producing PCR-negative piglets for at least 90 consecutive days (or 4 testings, monthly basis) (TTNP)

III – “provisional negative” = negative herd after (PRRSv-susceptible) replacement pig introduction

IV – “negative” = all pigs testing negative for ELISA and PCR-based assays (~ 2-3 years after LCE).

Management Practice Information Collected in Survey:

- Type of PRRSv immunization used in the breeding herd as part of LCE (LVI or MLV)
- Type of PRRSv used in replacement pigs as part of LCE
- Location of gilts during herd closure
- PRRSv exposure status of gilts introduced after TTNP status
- Veterinarian’s criteria to decide end of closure
- AASV PRRSv status of breeding herd 60 days after replacement pig introduction
- Genetic similarity of PRRSv at 60 days after replacement pig introduction (end of closure)
- Frequency that herd veterinarian recommended the management practices indicated AASV PRRSv taskforce to be crucial for herds undergoing PRRSv elimination (Lowe et al., 2012)

Objective

To compare the use of MLV and LVI exposure methods on PRRSv elimination rate and to compare the role of management practices on LCE success

Results

- Success rate of LCE was 70% LVI vs 75% MLV (p-value 1.0)
 - Excluding failures associated with apparent new PRRSv, success rate was 76% and 92% for LVI and MLV (p-value 0.2584)
- Five herds that reached TTNP failed to reach AASV category III:
 - The current standard to monitor herds undergoing PRRSv elimination (lack of viremia over 90 days testing 30 piglets/month, Holtkamp et al., 2011) did not necessarily reflect “negative” status of the herd.
 - Excluding infections with apparent new PRRSv, 85% and 100% of herds using LVI and MLV programs achieved LCE success (p-value 0.3034)
- TTBP, total loss and TTNP were poor predictors of ability to reach “negative herd” status when evaluated as continuous variables
- Herds assisted by different vets had different set of recommendations of management practices
- Odds of LCE success was lower for farms infected w/ PRRSv of RFLP pattern 1-4-4 and farms holding back pigs at weaning for quality

Conclusions and Implications

- Although the exposure choice of MLV or LVI influenced production losses and TTNP, there was no significant difference between these two for achieving AASV classification III.
- Approximately 18% of herds that failed to detect PRRSv in due to wean piglets for 90 days (i.e reached AASV category IIb) did not achieve AASV category III, indicating that more sampling is needed in herds undergoing PRRSv elimination to decrease this likelihood.
- There was no agreement between veterinarians on the relative importance of management practices indicated by the AASV taskforce as being important in herds undergoing PRRSv elimination.
- The variables associated with failure to reach AASV category III were:
 - a) being infected with PRRSv of RFLP pattern 1-4-4 and
 - b) holding back pigs at weaning for quality.