A PRACTICAL EXAMPLE OF PRRS MONITORING IN A DUTCH REGIONAL CONTROL PROGRAM

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Background & Objectives

Knowledge of PRRSV epidemiology and classifying farms according to shedding and exposure are crucial for implementing strategic measures to control PRRS. This monitoring project was carried out by Hipra Benelux together with the herd veterinarian as part of a Dutch regional control program. The participating farms were located close to each other in a pig dense area of 5 km^2. The objective was to evaluate PRRSV epidemiology and identify risk factors causing an unstable status.

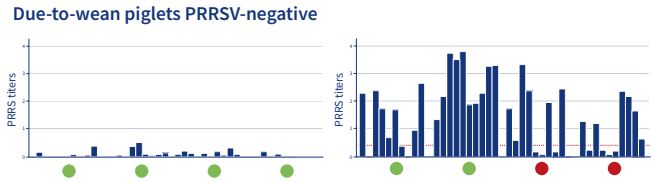
Materials & Methods

Seven farms (8,000 sows) participated in the study (April-July 2022). PRRS status was determined as stable or unstable by PCR of 30 sera of due-to-wean piglets (3W). PRRS epidemiology was then investigated in 4 consecutive batches of gilts, neonatal piglets, and 10-week-old (10W) pigs. Gilts were tested via oral fluid just before their introduction in the breeding herd (OF, 2 pools/batch). Processing fluids (PF) or - in the case castration not being done - tongues of stillborn piglets were sampled to assess vertical transmission of PRRSV. Serum samples of 10W pigs (n=10/batch) were analyzed for antibodies (Indical Bioscience PRRS ELISA) and by PCR. ORF-5 sequencing was performed. The level of biosecurity of each farm was evaluated using the Biocheck. UGent tool.

Results

4 farms were classified as PRRS stable. Two of them achieved PRRSV-negative outflow of 10W pigs (PCR and serological). On the third farm, 2 out of 4 batches of 10W were negative to field strain by PCR but serologically positive due to vaccination. The fourth farm became unstable during the monitoring. From the three farms classified as unstable, 11 out of 12 batches of 10W pigs were PCR-positive to field strain (See Figure 1). Based on ORF-5 sequencing, there was no overlap in field strains between farms and within farms, homology was >98%. None of the OF samples of gilts were PCR-positive to field virus.

Overall scores for internal and external biosecurity for each farm are shown in Figure 2. The farms with PRRSV-negative outflow at 10W showed higher internal biosecurity scores for the following categories; disease management, measures between compartments, working lines and use of equipment.



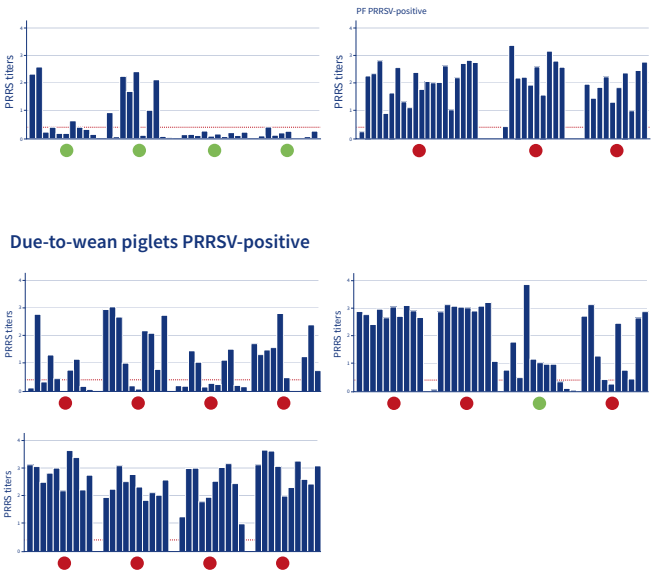


Figure 1. PRRS serology (blue bars) and PCR results (dots) of 10W piglets. Red dots mean positive result, green dots mean negative result. PRRSV + means field virus was detected. Each block of bars and dots represents one consecutive sampled batch.

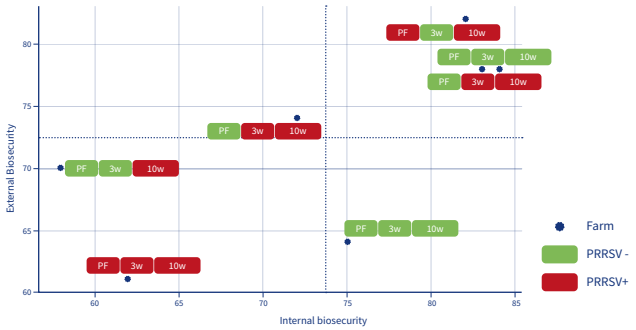


Figure 2. Biosecurity scores for External and Internal Biosecurity of the farms. Maximum score – 100.

Discussion & Conclusion

The monitoring protocol in this regional PRRS control program classified farms as PRRS stable and unstable and provided data on shedding and exposure in the farrowing and nursery units. Combining this information with biosecurity measures is crucial for a farm-specific control or elimination strategy for PRRS. Stable farms with high internal biosecurity level were able to achieve PRRSV-negative outflow of pigs, despite their location in a pig dense area.