

BIOSECURITY LEVEL AND PRRS PREVALENCE RELATIONSHIP STUDY WITHIN A LARGE SPANISH SWINE COMPANY

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Background & Objectives

PRRSv continues to cause problems for swine farms all around the world. A multidisciplinary approach in the control of this disease is mandatory. A strict and farm-adapted biosecurity plan to reduce the occurrence of new outbreaks or farm field strain recirculation has been demonstrated to help with the reduction of PRRS virus disease incidence. However, the relationship between the compliance of biosecurity measures and the presence of the disease in field conditions is difficult to evaluate. This study carried out in Spain, evaluated the correlation between biosecurity scoring in a 92,000 sow census swine company and the real prevalence of PRRS virus.

Materials & Methods

As a part of a PRRS monitoring program, 41 farms representing 52,000 sows performed a monitoring protocol based on PCR analysis to classify farms which were stable or unstable to PRRS virus. PCR testing from processing fluids (tongues from stillborn piglets) in the lactation rooms, blood samples (30x) from due to wean piglets and oral fluids from 10 week old pigs were performed monthly in order to detect PRRS virus. Moreover, initially all farms performed the HIPRA biosecurity audit based on an 84 question-and-scored-answer model that covers the most relevant points concerning PRRSv introduction and transmission. With this information, the relationship between the percentage of PCR+ received per farm at Diagnos (Hipra) from March 2021 to March 2022 and the individual biosecurity score per farm was performed using a Pearson correlation and a non-parametric test (Wilcoxon test).

Results

Considering all farms biosecurity scores, external biosecurity failures and PCR+ showed a positive but not statistically significant correlation with a R value (Pearson coefficient of correlation) of 0.25 (p-val 0.13). Furthermore, two categories showed a strong correlation; semen (R = 0.24; p-val 0.16) and transport (R = 0.18; p-val 0.29).

When the truck is able to access the loading bays from outside, the percentage of PRRS PCR+ is statistically significantly lower (25.47% vs 45.28%, p-val: 0.028). Fig 1.

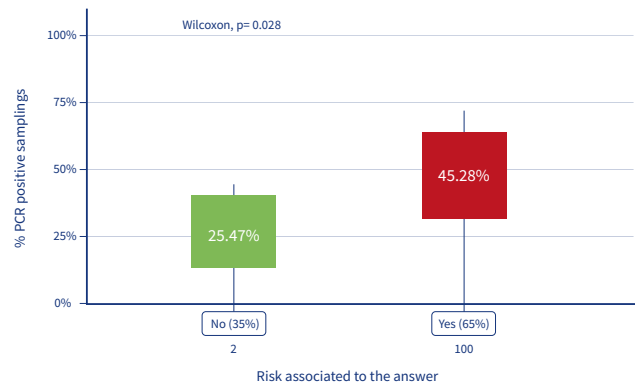


Figure 1. Correlation between the need for the driver/truck to enter the farm to access the loading bays and the percentage of PCR positive samplings. Significant differences were observed (Wilcoxon test; p<0.05)

Additionally, the absence of ELISA and PCR testing in the gilts after entering or before leaving quarantine and the ability of the trucks to access the feed silos from outside the farm are also related to a lower positivity (31.76% vs 45.24%, p-val= 0.075) and (52% vs 36%, p-val: 0.059) respectively. Fig 2.

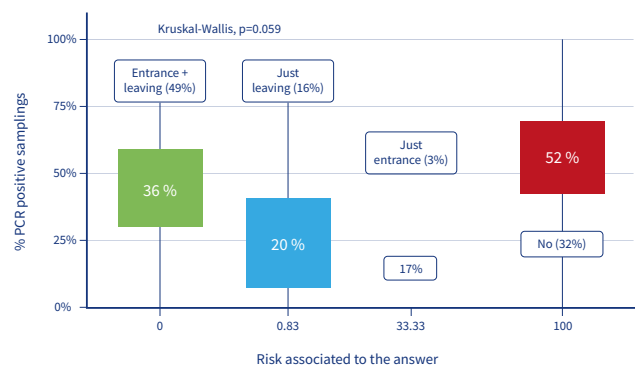


Figure 2. Correlation between PCR and ELISA test in gilts after the entrance or leaving the quarantine and the percentage of PCR positive samplings. Significant differences were observed (Wilcoxon test; p<0.05)

Discussion & Conclusion

These first observations which would need to be consolidated on a larger number of farms, show that establishing a relationship between identified biosecurity weaknesses and PRRS positivity could be a good way to complete the information collected from a biosecurity scoring tool and prioritize biosecurity measures within a PRRS control plan.