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TITLE

PRRSV MOLECULAR EPIDEMIOLOGY IS ABLE TO AUDIT BIOSECURITY IN PIG PRODUCTION COMPANIES

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CONTENT

Introduction

Porcine reproductive and respiratory syndrome (PRRSV) is one of the most important viral diseases affecting pig production. The introduction of new PRRSV strains and/or the appearance of new outbreaks due to endemic PRRSV strains are key points to control this important disease under field conditions. The aim of this research work was to find out whether the incidence of PRRSV outbreaks is due to new or endemic PRRSV strains and associates it with external biosecurity score.

Material & Methods

One hundred PRRSV positive farms were included with, at least, two PRRSV outbreaks diagnosed by standard diagnostic procedures from 2015 to 2018. These farms belonged to ten pig companies. All positive samples were sequenced using Sanger technology for ORF5 and similarity analysis between strains was carried out using CLC Genomics Workbench 11.0®. Two strains were classified as different with a similarity lower than 97% in ORF5 sequence. The score of external biosecurity by farm was calculated using published methods.

Results

The incidence of PRRSV outbreaks was very variable between companies. In four companies, the incidence of new strains was significantly higher than the incidence due to strains detected previously in the same company whereas the contrary was observed for the other six companies. Moreover, it was observed a significant association between external biosecurity score and the probability to get infected with a new strain.

Discussion & Conclusion

Molecular epidemiology of PRRSV is able to monitorize the evolution of PRRSV strains in relation with pig companies. Standard operation procedures in relation with pig flow is a key point to disseminate PRRSV strains detected in individual farms belonging to the same pig production company. Thus, external biosecurity is a critical point to avoid the presence of new PRRSV strains in a pig production company.