

TITLE

EVALUATION OF THE EXTERNAL BIOSECURITY IN A FARM USING BIOPORTAL: CASE REPORT

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CONTENT

Background and objectives

Molecular epidemiology of PRRSV, has been used for description of pathogen phylogenies and to make conclusions about the most likely virus source.

The objective of this study was to analyze the dynamics of the PRRSV in one farm and to understand if the new sequences obtained during a period of time were resident or lateral entrances of virus.

Materials and Methods

One farrow-to-finish-multiplier farm implemented a PRRS eradication program in June 2016, including two sow mass vaccinations, piglet vaccination and RT-PCR in sera of 30 due-to-wean piglets, 10 nursery piglets, and 10 fatteners in a monthly basis. Positive results were sequenced. Eighteen ORF5 sequences were obtained between June 2016 and August 2017. Bioportal software was used to analyze the phylogenetic relationships between sequences.

Results and Discussion

In June 2016 two different sequences were present in the farm, one modified live vaccine virus sequence and one field virus sequence. After sow mass vaccination and piglet vaccination at weaning those sequences were not found in the farm again. In November 2018 a new modified live vaccine strain never used in the farm was and in February 2017 a new field virus was found in fattening piglets. After this new entrance the nursery and the fattening were depopulated in July 2017. By the end of August 2017, a new failure of external biosecurity occurred and a new different virus was found. After 14 months from the start of the eradication program, the farm was still PRRS positive. Using Bioportal we were able to determine three entrances of new viruses due to external biosecurity failures.

Conclusions

Bioportal is a good tool to understand biosecurity issues. It helps us to understand the origin and dynamics of PRRSV in a farm, to evaluate the external biosecurity and to modify the PRRS control programs.