



HERD HEALTH MANAGEMENT & ECONOMY

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EFFECT OF FARM MANAGEMENT PROCEDURES ON THE PRODUCTIVE PERFORMANCE IN A PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME (PRRSV) VIRUS INFECTED FARM USING PDP MODELS

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Introduction

Several strategies to control PRRSV have been described such as implementing a gilt acclimation protocol, a PRRSV vaccination program for gilts and sows and to control the spread of pathogens in suckling pigs. In this context, the impact of management procedures, focus on limiting the transmission of infectious agents through the population (non-mixing litters and limit cross fostering), has not been deeply analyzed. The aim of this research work is to use PDP models to decipher the impact of different management decisions on the epidemiology of PRRSV under field conditions.

Material & Methods

A PDP model has been developed to simulate a pig farm. This model is able to run in parallel multiple processes to model complex problems. In this model, different scenarios were analyzed taking into account the percentage of PRRSV infected sows in the farrowing unit (1, 2.5, 5 and 10%), the use (CF) or not (NCF) of cross-fostering the first week of piglet life and maintaining the litter integrity (LI) or not (NLI) during the rearing period (nursery and fattening). The outcome of the model was the percentage of sick animals at the end of the nursery and fattening period and the number of sick and dead animals during the rearing period.

Results

NCF and LI management decreased significantly the percentage of sick animals at the end of the nursery and fattening period and the number of sick and dead animals during the rearing period versus the CF and NLI management in all the range (1-10%) of PRRSV infected sows. Moreover, a significant interaction exists between the NCF and LI management.

Discussion & Conclusion

These results highlight the relevance of different management strategies to control diseases and quantify the effect of the MCREBEL management on PRRSV epidemiology under field conditions to optimize animal production.