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ERADICATION OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME BY SERUM ACCLIMATIZATION OF NAÏVE GILTS

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Introduction

Naïve gilts become actively infected upon introduction to the herd and can perpetuate PRRSV circulation in the sow herd. Gilt acclimatization has been described as an effective management program to prevent recirculation of the virus in previously infected sow herds by designating periods of exposure and recovery before the gilts are introduced into the breeding herd¹. Batista et al² showed that inoculation of PRRSV-negative replacement gilts with serum from nursery pigs presumed to be PRRSV-viremic resulted in the successful exposure of naïve animals to the herd-specific strain. This study describes how a gilt acclimatization program using serum injection, was used successfully to control PRRSV from the sow herd and achieve the eradication from nursery and finisher population.

Materials and Methods

The acclimatization program included the serum infection (exposure) and recovery. The acclimatization unit was placed in an isolated site, away from the sow facilities and the gilts remained there at least 10 weeks following infection. A continuous flow unit from the same farm, used for nursery and finisher sick and poor condition pigs was selected as a potential source of virus. The inoculum preparation from the selected animals was done as has been described before for Batista et al². Negative gilts were inoculated 5 days after arrival by intramuscular injection of 1 ml serum from selected animals. To verify whether or not this gilt management program was achieving the initial purpose, an epidemiological assessment program was performed. A cross sectional serologic profile was performed in the breeding herd (n=80), nursery (n=20) and finisher (n= 20 to 30) animals every 4 months. In the finisher population there were 2 kinds of flow, a fully segregated flow and a partially segregated, for this reason the serological assessment was done in separate for each kind of flow.

Results

In the sow herd there was a significant reduction in seroprevalence after the implementation of the gilt acclimatization program (P<0.05). Additionally, all of the tested nursery pigs were negative. However a persistent seroconversion was observed in the partially segregated finisher pigs (P>0.05). On the other hand, the fully segregated finisher population had a significant reduction in the frequency of ELISA positive animals (P<0.05) and by the end of the study (24 months) all animals were negative to slaughter.

Discussion

According to the serological assessment of the breeding herd, it can be concluded that the gilt management program prevented PRRSV transmission and recirculation in the sow herd, since the S:P ratios decreased significantly with time. It appears that as a consequence of the breeding herd stabilization vertical transmission was reduced or stopped, allowing the eradication of the disease on the nurseries. In the fully segregated finisher population flow, at the end of the study all the pigs tested negative and the virus was considered eradicated. Conversely, pigs raised in the partially segregated flow remained infected. This confirms that the production flow has a influence over the control and eradication of the disease in finisher populations. In conclusion, the gilt acclimatization program achieved sow herd stabilization, as defined by the production of negative weaned pigs, and this resulted in the complete eradication of the virus in the fully segregate flow.

References

1. Dee S. *J Swine Health Prod.* 1997;5:231-239.
2. Batista L, Pijoan C, Torremorell M. *J Swine Health Prod.* 2002;10(4):147-150.