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ERADICATION OF PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS (PRRSV) BY SERUM INOCULATION WITH THE HOMOLOGOUS PRRSV STRAIN

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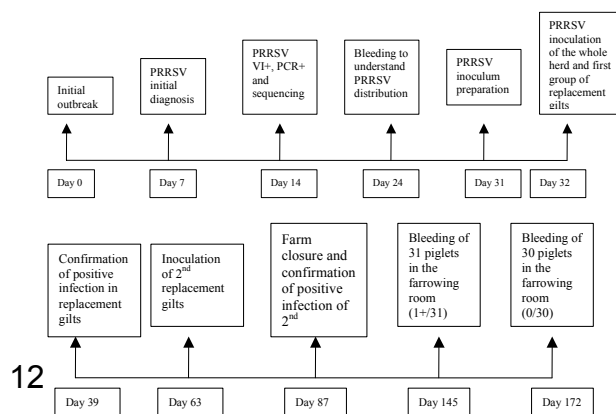
Introduction

Porcine reproductive and respiratory syndrome virus (PRRSV) constitutes one of the most important disease problems that the swine industry faces today (1). Control of PRRSV in the sow herd requires that all animals be exposed and allowed to recover from the virus, preferably to the farm homologous strain. This can be accomplished through gilt acclimatization programs using nursery pig serum, but these programs take a long time until all original, non acclimatized sows are rolled out. Practitioners have extrapolated this data from the controlled exposure to homologous PRRSV strain in gilts (5) and have attempted to inoculate the whole herd with the homologous strain of PRRSV present in the herd (6). However, there are some obvious questions regarding the use of infectious serum in pregnant sows, as there appears to be a considerable risk of this practice resulting in an outbreak.

The purpose of this paper is: 1) to describe the use of serum inoculation, together with farm closure, in an attempted eradication protocol in a sow farm

Materials, Methods and Results

The protocol was performed in an 800-naïve-sow herd undergoing a severe outbreak of PRRSV. All sows were inoculated with serum from infected suckling piglets in accordance to the following time line



Final results will be presented at the meeting.

Discussion

As shown in Figure 1, 172 days after the initial outbreak and 140 days after serum inoculation, the farm started to flow negative animals. It appears that the success of the program was due to several key factors: 1) Achievement of a complete herd sterilizing immunity that eliminated naïve subpopulations 2) Exposure of the replacement gilts needed for the next five months to the homologous PRRSV strain and, 3) Farm closure and extensive testing in the herd. There are several considerations that need to be taken in when using this approach, which include 1) strain differences in virulence, 2) immunological status of the inoculated herd 3) inoculum titration and characterization among others. However, the finding of one viremic animal 75 days after serum inoculation demonstrates that even with this extreme measure, a rapid sterilizing immunity of the whole herd was not achieved. This underlines the need for allowing sufficient time for the animals to generate the expected immunity. In this study, serum inoculation of the breeding herd, together with farm closure resulted in the successful eradication of PRRSV from the farm.

References:

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