

Sow herd stabilization using a PRRS modified live virus vaccine against PRRSv field isolate RFLP 1-26-2

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INTRODUCTION

Over the past 20 years, field veterinarians, producers and scientists have identified different strategies to control PRRS virus. Such strategies are defined by the production systems, co infections and also the presence of high pathogenic variants, like the ones detected since 2008 in United States¹ as well as in Mexico. The aim of the study is to evaluate the time laps it takes to stabilize the sow herd infected with a field variant PRRSV RFLP 1-26-2, using a modified live virus vaccine (MLV) and holistic management.

MATERIALS AND METHODS

A multi-site system with an inventory of 4,139 sows located in the state of Puebla experienced a PRRSV outbreak in September 2015 (week 37). Previous to that outbreak, the farm was positive stable and for that reason the company decided to reduce the number of immunizations to the sow herd with PRRS MLV vaccine, from 4 mass vaccinations to 3 per year (every 4 months); the reproductive parameter affected was the abortion rate with an increase of 38.63% ($p > 0.05$). At the moment the reproductive event began, 30 offsprings without colostrum intake were selected to collect serum samples from their umbilical cords (PUCS), in order to know the status for PRRS virus by real time PCR; 50% of the pools resulted positive for PRRS with a logarithm of 10^4 and by ORF 5 sequencing a 1-26-2 cut pattern was found. Subsequently the sow herd was vaccinated with Ingelvac PRRS MLV and re-vaccinated 4 weeks later in order to maximize the immunity and minimize the viral excretion. Also the sow herd received a support treatment with analgesics / antipyretic and antibiotics in their gestation and lactating feed. 12 weeks after the second mass vaccination, a diagnostic monitoring began by real time PCR, based on 4 consecutive samples of PUCS from 30 offsprings, with a separation of 1 month between each one of them (based on a 10% prevalence and a 95% confidence level 2); at the same time a serologic test was implemented on the sow herd every 3 months in order to detect the time to stabilize them.

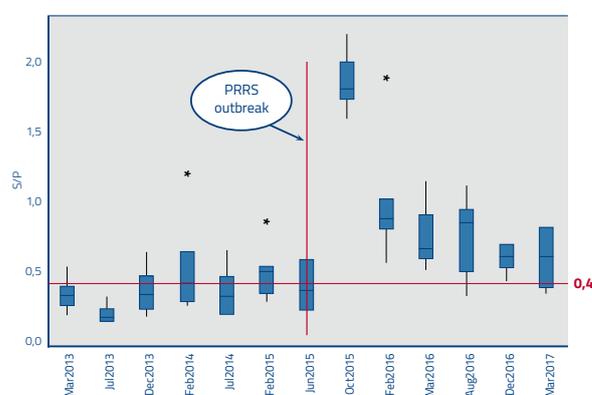
RESULTS

Based on the molecular diagnostics, starting from 12 weeks post vaccination a 100% of the pools resulted negative in a consecutive way, indicating the sow herd stability (table 1). The serological result monitored for 4 consecutive years also showed a behavior to stability 20 weeks after the outbreak (February 2016), in which the serology demonstrated an average of S/P value below 1, and such behavior remained stable until March 2017 (Fig. 1). Since then, a viral circulation has not been detected by RT-PCR, or clinical suggestive signology to the virus.

Table 1. Results of PRRS by qRT-PCR.

Week	12	16	20	24
	Negative	Negative	Negative	Negative

Figure 1. Serological status of the sow herd.



DISCUSSION AND CONCLUSION

The delivery of negative pigs at birth, and the clinical and serological stability of the sow herd are important tools to understand and monitor the herd status when you implement a PRRS control project. The term of stability in this study was using to indicate the probability of finding positive animals below a prevalence equal or lower to 10%. A holistic production management and the use of a modified live virus vaccine to maximize immunity and minimize excretion have proved to be effective in the reduction of the clinical impact and restoring the reproductive parameters in a short period of time³.

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