

# 1<sup>st</sup> case report: Reproductive performance improvement after PCV2 sow vaccination in Spain



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## INTRODUCTION

Porcine circovirus type 2 (PCV2) is a globally prevalent virus that in growing pigs can provoke several diseases aka PCV2-associated disease (PCVAD).

PCV2 can also be associated with reproductive failure and cause infertility and increased rates of mummified, macerated, stillborn and weak-born piglets<sup>1,2,3</sup>.

A previous study carried out in Spain found that only in one out of 293 reproductive failure cases PCV2 DNA was detected<sup>4</sup>.

The aim of this study was to determine the impact of PCV2 sow vaccination on several reproductive parameters in a Spanish sow herd.

## MATERIALS AND METHODS

The farm of the present case report is a one-site, 1200-head sow farm located in Aragon (Spain). The farm was positive for PRRS (stable throughout the period of study), Mycoplasma and PCV2. The sow herd was vaccinating against PRRSv, every 3 months, and for PPV post farrowing. Since 2015 the abortion rate has been above (5,2 %) and the overall reproductive performance below the target.

Immunological tests and vaginal swabs were all negative for PRRSv, *Leptospira*, *Clamidia* and *E. rhusiopathiae*. *Streptococcus spp* and *Treperella pyogenes* were detected in vaginal swabs. Thus whole herd antibiotic treatment was applied without significant performance improvement.

Regarding PCV2, vaginal swabs (2 pools out of 3) as well as blood from sows that aborted were PCR positive. According to that, sows were mass vaccinated twice with 1 ml of Ingelvac CircoFLEX® (Boehringer Ingelheim, Spain, SA) in December 2016 and January 2017, and subsequently mass revaccinated every 4 months.

Several reproductive parameters were analyzed by ANOVA or non-parametric tests with Minitab.17.1.0 software (2013 Minitab Inc.).

## RESULTS

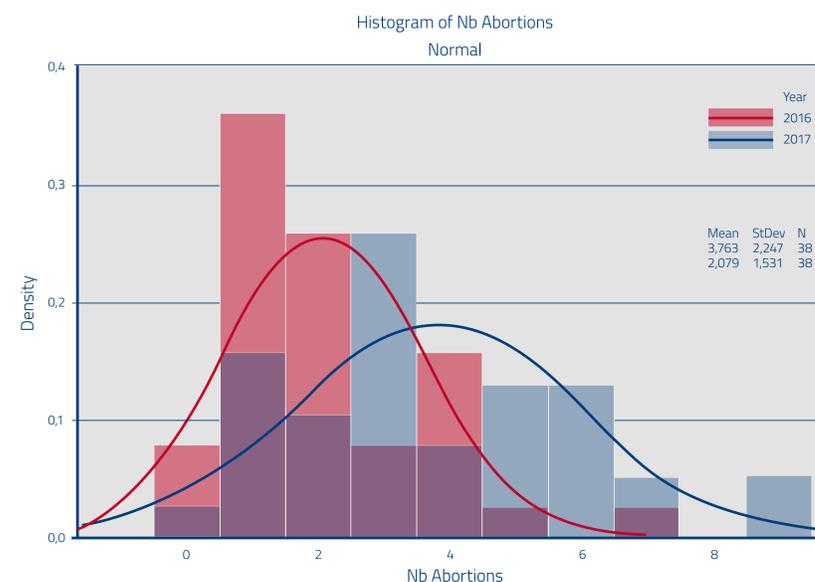
A summary of the reproductive performance of the first 38 weeks of 2016 and 2017 is depicted in table 1.

Figure 1 shows the annual distribution of weekly abortions that were statistically reduced after vaccination ( $p=0.001$ , Kruskal-Wallis test).

**Table 1. Interannual comparison of weekly reproductive records (n = 38 weeks/year).**

Reproductive Index	2016 (x ± sd)	2017 (x ± sd)	P-value
Born Alive	13.4 ± 0.4	13.7 ± 0.5	0.002
Stillbirths	1.16 ± 0.2	1.09 ± 0.2	0.16
% Fert 40	87.3 ± 5.1	92.7 ± 3.5	<0.001
Weaning fecundation interval	7.6 ± 1.8	7.3 ± 1.5	0.70
% Litter Scatter	6.9 ± 2.4	6.8 ± 3.7	0.90

**Figure 1. Histogram of the distribution of the weekly number of abortions.**



## CONCLUSIONS

PCV2 epidemiology has changed since widespread PCV2 piglet vaccination but the virus is still present in most farms. In this case report we have confirmed the presence of the virus in vaginal swabs from an aborted sow. Furthermore, PCV2 sow vaccination has led to a significant reduction of abortions and improvement of several reproductive indexes. The results of this case indicate that there might be an interest in PCV2 sow vaccination to maintain high herd immunity levels and reduce PCV2 circulations.

## REFERENCES

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