Reducing PCV2 viremia in neonatal pigs through sow mass vaccination in a unstable herd

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INTRODUCTION

In utero infection of piglets with PCV2 may serve as a potential source of PCV2 vertical transmission to the offspring[1]. This infection might make newborn pigs more susceptible to co-infections with other pathogens and therefore may be associated with PCVAD in the growing pig[2].

It has been shown before that Ingelvac CircoFLEX® is safe when used in sows[3].

The objective of this study was to determine the prevalence and viral load of PCV2 viremia in pre-suckle piglets before and after sow mass vaccinations.

MATERIALS AND METHODS

This study was conducted in a 2,800 sow herd located in Toledo, Spain. The herd is positive for PRRS, M. hyo. Pigs are vaccinated with Ingelvac CircoFLEX® weekly at 3 weeks of age. PCV2 was detected in 4 week old piglets showing performance problems during nursery phase although the sow herd didn't have reproductive performance problems.

To evaluate the stability of the herd to PCV2, we bled 39 pre-suckle piglets and individually qPCRs were run following this protocol:

3 piglets per litter from 5 parity 1 – 2 sows (P1 – 2)
3 piglets per litter from 4 parity 3 – 4 sows (P3 – 4)
3 piglets per litter from 4 parity ≥ 5 sows (> P5)

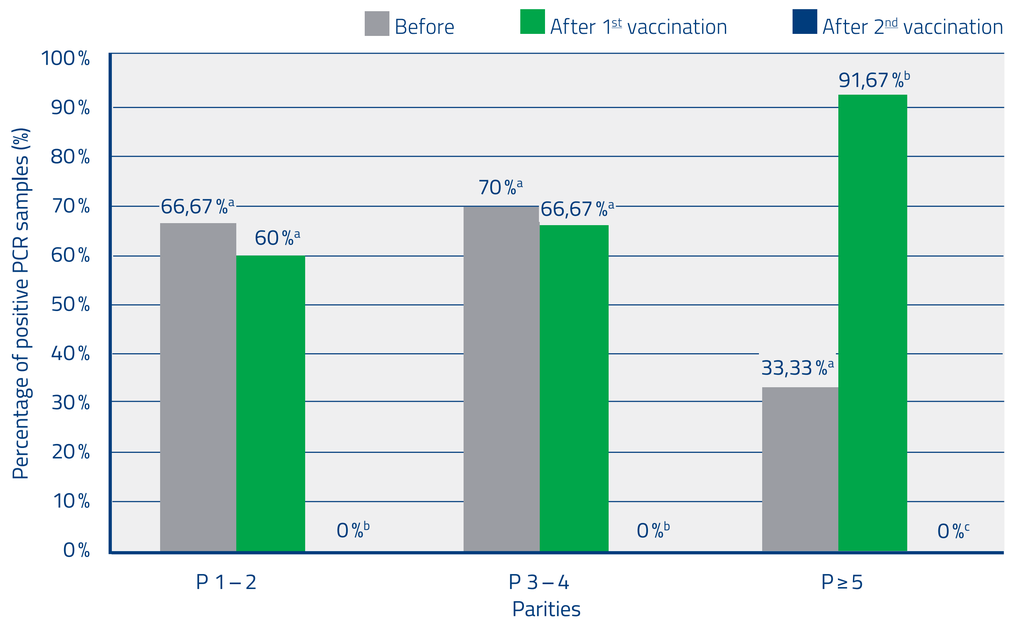
The same sampling was repeated 2 months after mass vaccination of the whole sow herd with Ingelvac CircoFLEX® (1 ml). Another mass vaccination was applied due to high pressure of the virus. The third sampling was done 2 months after the second vaccination.

All statistical analyses were performed using SPSS v.15 (SPSS Inc. Chicago, IL, USA). Differences were considered statistically significant at $p < 0.05$.

RESULTS

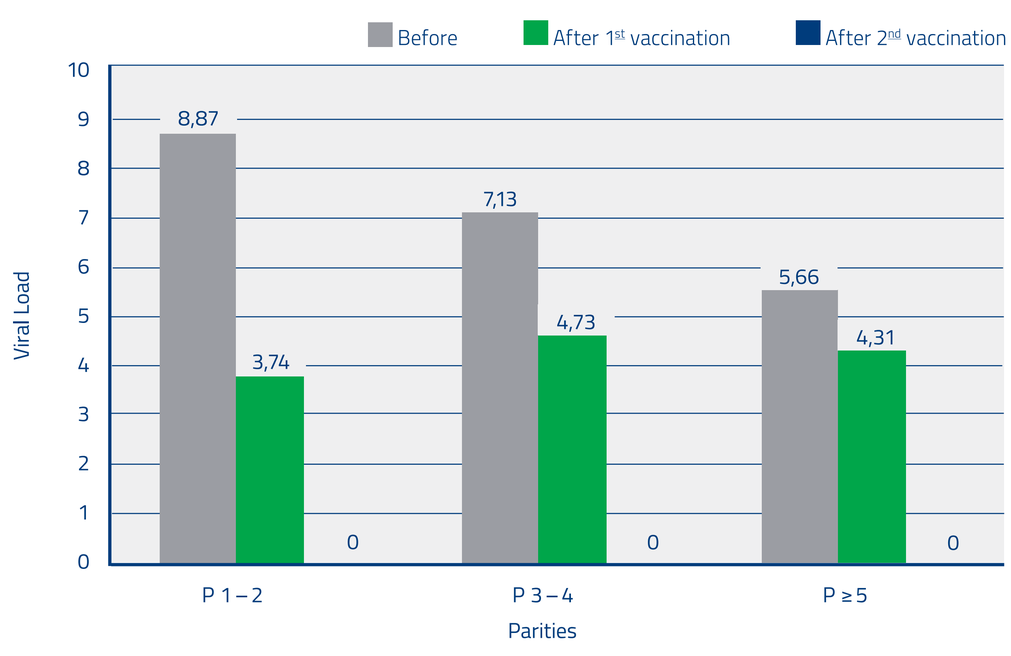
In the first sampling corresponding to piglets from non-vaccinated sows, PCV2 virus was detected in 66,7 % of the piglets in P1 – 2,70 % in P3 – 4 and 33,33 % in > P5 and the mean of viral load (expressed as log10) was high showing 8.87 in P1 – 2, 7.13 in P3 – 4 and 5.66 in > p5. When looking at the different parity groups, after the first mass vaccination the results didn't show any difference of PCV2 positive piglets but a strong reduction was observed in viral load (8,87 vs 3.74 in P1 – 2, 7.13 vs 4.73 in P3– 4 and 5.66 vs 4.31 in > P5). None of the samples after the second mass vaccination resulted in positive sample, reducing the viral load below the detection level.

Figure 1: Percentages of positive piglets for PCV2 by PCR in the different parities before (grey bars) and after sow PCV2 vaccinations (green and blue bars).



Different letters (a,b,c) indicate significant differences (p<0.05) within different parity groups.

Figure 2: Mean load of virus (expressed as log10 values) in piglets in the different parities before (grey bars) and after sow PCV2 vaccinations (green and blue bars).



DISCUSSION AND CONCLUSION

According to the results obtained by qPCRs, we can conclude that is possible to reduce prevalence and viral load of PCV2 in presuckle piglets by using Ingelvac CircoFLEX® in a mass vaccination protocol in sows.

Further studies are necessary to determine whether there is a correlation between prevalence of PCV2 in presuckles pigs and performance parameters.

REFERENCES

1. *Madson, D.M. and Opriessnig, T. 2009. Proc. of 17th Swine Disease Conference for Practitioners. Pg. 931–01.*
2. *Ha Y, Lee YH, Ahn KK, Kim B, and Chae C. 2008. Vet Pathol 45:842–8*
3. *Yeonsu et.al. Veterinary Microbiology 172 (2014) 371 – 380*