

Benefit of piglet PCV2 vaccination in a herd with subclinical PCV2 infection



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INTRODUCTION

Based on serological studies, it is assumed that PCV2 is ubiquitous in the pig industry across the world¹. Today the most common form of PCV2 manifestation is the subclinical infection. Even if no overt clinical signs are seen, different field studies indicate that PCV2 vaccination is able to improve productive parameters (average daily gain (ADG), body condition and carcass weight) in cases of PCV2 subclinical infections². The purpose of this study was to evaluate the benefit of PCV2 piglet vaccination on ADG and mortality rate from weaning to slaughter in a herd subclinically infected with PCV2.

MATERIALS AND METHODS

The study was conducted in a 490 sow farrow to finish farm located in Brittany, France, positive for PRRSV, PCV2, APP, *Mycoplasma hyopneumoniae*, and *Lawsonia intracellularis*. Before this study was initiated only the breeding herd was vaccinated for PCV2 (Ingelvac CircoFLEX®). Gilts were vaccinated during quarantine to facilitate their acclimatization; sows were vaccinated during lactation to prevent PCV2 reproductive failures. The health status of the farm was well controlled with a mortality rate from weaning to slaughter below 5%. The ADG from weaning to slaughter puts the farm in the upper third among Brittany swine farms. Before the start of the study pigs of 120 and 140 days of age (doa) were tested positive for PCV2 by PCR. In total 929 piglets from 4 farrowing batches were included in the study. At 20 doa, one day before weaning, piglets were individually weighted, ear tagged and randomly allocated to either Group V (Vaccinated Group, N=465) or Group C (Control group, N=464). Piglets from Group V were injected with 1 ml Ingelvac CircoFLEX® by the intra-muscular route. Piglets from Group C did not receive any vaccine. After weaning pigs of both groups were kept in separate pens, but in the same room. The farm staff was blinded to treatment. To determine the course of PCV2 infection ten randomly selected pigs per group and per batch were designated as sample animals. These in total 80 sample pigs were serially bled at inclusion, end nursery, mid and end finishing. Serum samples were frozen and stored until completion of the study. Samples were assayed by PCV2 quantitative PCR. The primary parameters of this study were ADG and mortality rate from weaning to slaughter. Individual carcass data were collected at slaughter. Live weight at slaughter was calculated back from the carcass weight and was used together with the individual slaughter age to calculate the wean-to-slaughter average daily gain (ADG w-s). Data were analyzed using the statistical software Mintitab® (version 17). Data from the groups were compared using a t-test.

RESULTS

At inclusion mean body weights, sex ratio, parity as well as age were similar between the two treatment groups (Table 1). PCV2 viremia was confirmed by PCR on serum samples in animals of treatment

group C of all 4 batches. The level and duration of viremia varied from batch to batch. In total, 17 pigs died during the study, 9 in the vaccinated group and 8 in the control group. The low mortality rate in both groups confirmed the subclinical expression of PCV2 infection in this farm. ADG from weaning to slaughter was significantly greater in Group V than in Group C ($p < 0.05$) (Table 2). The difference of ADG between groups was variable between batches (Table 2).

Table 1: Numbers, weight and parity at inclusion

	Group V	Group C
N at inclusion	465	464
Mean age (days)	20.14	20.12
Mean parity	3.30	3.29
Mean inclusion weight (kg/sd)	5.83/1.13	5.88/1.14

Table 2: Performance results of the two treatment groups

	Group V	Group C	Diff.	p
N losses w-f	9	8	1	n.s.
ADG w-f (g) 4 batches	719.11	708.05	11.06	0.019
ADG w-f Batch 1	706.95	700.06	6.89	NT
ADG w-f Batch 2	721.63	708.25	13.38	NT
ADG w-f Batch 3	714.82	713.49	1.33	NT
ADG w-f Batch 4	731.70	711.49	20.21	NT

n.s.: not significant, NT: not tested

CONCLUSION

This study demonstrates the benefit of PCV2 piglet vaccination on ADG in a farm having already good technical results and in which PCV2 infection was not suspected to impair the performances. In the present study it was not able to determine FCR but it could be speculated that it can also be improved by vaccination as Correge et al.³ showed.

REFERENCES

1. Segalés et al, M., 2005. *Anim. Health Res. Rev.* 6 (2), 119 – 142.
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