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Vaccination against PCV2 in a subclinically infected herd without signs of PMWS

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Introduction

Infections with PCV2 have for two decades caused substantial losses in form of mortalities and unthrifty pigs in herds affected by PMWS (1). PCV2 was first demonstrated in Sweden in 1993, but clinical signs of PMWS were not observed until 2003 (2). However, the majority of Swedish herds are considered to be subclinically infected with PCV2 which may have a negative effect on productivity. The introduction of effective vaccines in 2007 has dramatically reduced clinical symptoms of PMWS, but if there is a general positive effect on productivity in subclincally affected herds where there are no signs of PMWS remains unclear (3,4). Therefore, this study was conducted in order to investigate if vaccination against PCV2 could improve growth in a herd where clinical signs of PMWS were absent.

Materials and Methods

The study was conducted in a high-health 168-sow purebred Yorkshire nucleus herd, producing both purebred Yorkshire and Landrace x Yorkshire litters. The herd was free from mange, swine dysentery, salmonella, atrophic rhinitis, Aujeszky's disease and PRRS in addition to the diseases listed by OIE. Sows were routinely vaccinated against *E. coli*-diarrhea and piglets and breeding animals against *M. hyopneumoniae* at 3 and 23 weeks of age, respectively.

The presence of PCV2 had previously been confirmed, but clinical signs of PMWS were absent (5). Mortality was 1.1% among weaned pigs and 2.8% among fatteners during the year (2010) the study was conducted. Strict all in – all out, batchwise production was employed with 28 sows farrowing every 3rd to 4th week. Piglets were weaned at 5 weeks of age, but kept in the pen of birth until 10 weeks of age when they were transferred to an off-site fattening unit where they were penned by sex. All pigs were fed a dry-feed consisting of on-farm grown cereals, soybean meal, synthetic amino acids, minerals and vitamins.

At three weeks of age, the piglets in every 2nd litter were vaccinated intramuscularly in the neck with 2 mL of Porcilis®PCV (MSD Animal Health). Eighty-four litters (267 purebred Yorshire piglets) from 3 consecutive batches were included in the study. The age at 100 kg was determined, backfat thickness was measured and mortality was recorded.

Data on age and backfat thickness at 100 kg was statistically analysed, using analysis of variance. The statistical model included the effects of treatment (vaccinated or not), gender, batch, and the interaction between treatment and gender.

Results

Seven to 10 days after vaccination, a local swelling (≤ Ø 5 cm) at the injection site could be seen in nearly all vaccinated animals. No other adverse reactions were found and these lesions resolved spontaneously. Systemic reactions were not observed.

Data on age and back fat thickness at 100 kg was present for 245 pigs of which 122 (69 gilts; 53 boars) were vaccinated and 123 (63 gilts; 60 boars) were unvaccinated controls. Data are presented in table 1. No significant effect of treatment, or the interaction between treatment and gender was found.

Table 1. Performance of pigs vaccinated at 3 weeks of age, or unvaccinated against PCV2

Days at 100 kg (±SD)	Vaccinated	Control	P
Mean	146.3 ± 11.0	147.6 ± 9.5	ns
Gilts	148.7 ± 8.8	148.7 ± 8.9	ns
Boars	144.5 ± 12.4	146.4 ±10.1	ns
Backfat, mm(±SD)			
Mean	10.7 ± 1.9	10.4 ± 2.0	ns
Gilts	11.5 ± 1.8	10.9 ± 2.2	ns
Boars	9.7 ± 1.5	10.0 ± 1.7	ns
Mortality*	N = 4	N = 1	-

*Post-weaning

Conclusions and Discussion

The results indicate that vaccination against PCV2 did not improve growth performances in a PCV2-infected, high-health herd with batchwise production where PMWS had not been diagnosed. This is in accordance with previous studies (4).

References

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