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Vaccination against PCV2 in a herd that had been declared free from PMWSCarl-Johan Ehlorsson² Gunilla Blomqvist¹ Per Wallgren¹

1. Dept of Animal Health and Antimicrobial Strategies, Uppsala, Sweden; 2. Swedish Animal Health Service, Ängelholm, Sweden

Introduction

Combating other diseases and improving management routines has decreased the impact of Post weaning Multisystemic Wasting Syndrome (PMWS) (1). PMWS is associated to porcine circovirus type 2 (PCV2), and the impact of PMWS has been further decreased following introduction of vaccines directed against PCV2 (2). The present study aimed to scrutinise the relevance of vaccinating against PCV2 in a herd previously affected by PMWS, but declared free from clinical disease.

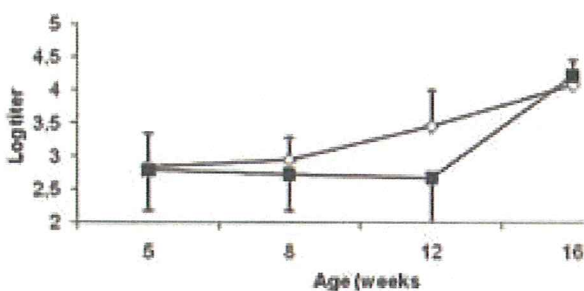
Materials & Methods

The study was carried out in a gilt producing herd previously deemed for PMWS, but declared free from PMWS at herd basis since one year. Batches of 24 sows farrowed every third week in previously emptied and cleaned units. Piglets born were weaned at the age of 6 weeks and kept as intact litters in the unit until the age of 12 weeks. At that age barrows were sold, while gilts were transferred to a growing unit with continuous production.

At three weeks of age, 12 litters of one farrowing batch were vaccinated against PCV2 (Ingelvac Circoflex, BI-Vet). The other 12 litters remained unvaccinated. All piglets were weighed at weaning and at 11 weeks of age. The gilts that remained at the herd were also weighed at the age of 21 weeks. Blood from two pigs per litter was collected at 5, 8, 12 and 16 weeks of age and analysed for presence of serum antibodies to PCV2 with an IPMA technique.

Results

Figure 1. Log antibody titers to PCV2 in vaccinated (◊) and unvaccinated (■) pigs.



The decreasing levels of serum antibodies to PCV2 from 5 to 12 weeks in the control group indicated a low PCV2-load in the farrowing unit. The vaccinated pigs seroconverted at the age of 12 weeks, while the unvaccinated pigs that seroconverted at 16 weeks of age.

There were no significant differences in mean body weights between the groups at any occasion (Figure 2). However, vaccinated gilts gained significantly more weight from 11 to 21 weeks of age. None of the 48 vaccinated gilts weighed less than 70 kg at 21 weeks of age. In comparison, 6 out of 54 unvaccinated gilts weighed less than 70 kg at 21 weeks of age. Out of 53 weaned vaccinated gilts, 48 were still at the herd at the age of 21 weeks (92%). The corresponding figure for the control group was 54 out of 60 (90%).

Figure 2. Body weights of pigs vaccinated or not against PCV2 at three weeks of age

	Vaccinated	Control	T-test
Weaning (n)	132	120	-
Wean (weight, kg)	11.9±3.1	12.0±3.5	NS
11 w (weight, kg)	29.4±5.9	29.7±7.6	NS
21 weeks (n)	48	54	-
Pigs <70 kg bw	0	6	-
Mean weight (kg)	90.4±11.8	85.5±14.0	(p=0.06)
Gain 11-21 w (kg)	60.7±9.0	55.7±11.9	p<0.05
DWG 11-21	867±129	796±169	p<0.05

Statistically significant difference if p < 0.05

Discussion & Conclusions

We saw no effect of the vaccination in the farrowing unit where the PCV2-load according to the serology was low. Thus, vaccinations against PCV2 with the aim of protecting weaned pigs in such units appear pointless.

However, vaccinated gilts seroconverted earlier when they met PCV2 in the unit with continuous production, indicating a positive effect of the vaccination. They also performed better (p<0.05) from 11 weeks of age, which was achieved by a lower number of poor performing pigs.

The results obtained support theories of improved performance following PCV2-vaccination also in herds without clinical PMWS. However, it ought to be remembered that this herd effectuated continuous production from 12 weeks of age, which coincided with the time when the pigs appeared to meet the infection with PCV2. Therefore, further studies ought to be made in herds with batch wise production to confirm the true relevance of vaccinating young pigs in herds without presence of clinical PMWS. Not the least since a decrease in number of underweighted pigs has a potential to shorten the effective rearing time for the entire batches.

References

- 1 Wallgren *et al.*, 2004. *Vet. Q.* 26:170187.
- 2 Kixmöller *et al.*, 2008. *Vaccine.* 26:3443-3451.