

PERFORMANCE IN THE OFFSPRING TO SOWS VACCINATED OR NOT VACCINATED WITH PCV2 VACCINE IN A BLINDED STUDY

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Introduction

PMWS is a multifactorial disease associated to PCV2, but not caused by PCV2 alone. Still, high levels of antibodies protective to PCV2 have been suggested to decrease the incidence of PMWS (1) and vaccinations of whole herds against PCV2 have been carried out successfully (2). However, as PMWS-herds can recover without vaccinations the results obtained could reflect effect of other measures and acquired natural immunity as well as of the vaccine. The aim of the present study was to evaluate the effect of the vaccine in itself in a blinded study in one herd.

Materials and methods

The study was conducted in a sow pool satellite performing all-in-all-out systems in all units. It received 110 pregnant sows every 4th week that farrowed in two identical units with 55 sows. Piglets were weaned at the age of 34 days with an average weight of 10kg (range 9.4kg to 10.8 kg in 24 randomly selected litters from two batches). Weaners were moved to weaner units matching each farrowing unit and allocated to fattening enterprises at 10-11 weeks of age.

The satellite was deemed for PMWS in January 2007 with post weaning losses of 4% compared to a previous mean of 1.5%. From July 2007 sows were divided into two categories, blinded to the staff at the satellite; 55 sows farrowing in one unit were vaccinated with Circovac (Merial, Lyon, France) seven and three weeks prior to expected farrowing and 55 control sows farrowed in the other identical unit.

Table 1. Average performance of sows and piglets in 3 batches

<u>Pre weaning</u>		Vacc	Non-vacc	t-test
Parity number		2.6±0.1	2.9±0.6	ns
Born per litter		12.5±0.6	12.1±1.1	ns
Weaned per litter		11±0.3	10.7±1.1	ns
<u>Post weaning</u>				
Mortality	%	1.6±0.9	2.4±1.5	*
Age, deliv.	d	74.6±3.8	76.0±2.7	ns
Weight,	kg	28.6±4.2	28.1±2.5	ns
DWG	g/d	444±65	418±34	ns
MJ/ Kg wg	Mj	24.4±0.3	25.3±0.7	ns

Average daily weight gains from weaning to allocation were calculated according to weight and age of the pigs at merchandise to fattening herds. Every weaner was inspected by a veterinarian at the age of 7 and 10 weeks.

Results

So far three out of 6 batches have been validated, and no differences in performance of the sows nor in clinical appearance of 7 week old piglets have been recorded.

A low prevalence of PMWS was recorded in both groups at 10 weeks of age (1/1993 vaccinated pigs and 5/1716 non-vaccinated, tab 2). At the clinical inspections, piglets were only allowed one diagnosis in table 2. When merging thin, hairy and PMWS, a significantly higher prevalence was found in the offspring to non-vaccinated sows. Also mortality (Tab 1) and treatments post weaning (Tab 2) were higher in the offspring to non-vaccinated sows.

Table 2. Average clinical scores at 10 week of age in 3 batches

Health status		Vacc (n=1993)	Non-vacc (n=1716)	χ ² -test
Healthy	%	97.0±0.8	94.5±0.5	ns
Respiratory	%	0.3±0.3	0.8±0.8	ns
Intestinal	%	0	0	ns
Lame	%	0.6±0.3	0.4±0.3	ns
a) Thin	%	1.2±0.4	2.7±0.8	***
b) Hairy	%	0.8±0.7	1.1±0.4	ns
c) PMWS	%	0.1±0.1	0.3±0.3	ns
a + b + c	%	2.1±0.7	4.1±0.3	***
Treated, lame	%	3.5±1.0	2.8±0.9	ns
Treated, other	%	2.5±0.9	7.2±3.0	***

Discussion

The study will collect results from three more batches before completed, and so far only includes three batches. Still, several significant differences were recorded in favour for the offspring to vaccinated sows.

Despite the very low incidence of PMWS the results obtained appear to have an economical relevance. According to a standard previously defined (3), the significantly decreased mortality with 0.8% units corresponds to 520 € per batch of 110 sows. Further, the numeric increase in DWG of 26 g per day shortens the rearing time to 30 kg with 2.8 days, corresponding 1093 € per batch. It remains to be seen whether this difference will become significant as the study is completed – and if so, at what level.

References

1. Meerts et al, 2006, BMC Vet Res 6 (2)
2. Josiel et al 2007 Proc Int Symp Emerg and Reemerg Pig dis 5, 127
3. Wallgren, 2000, Sw Vet J, 52:685-694.