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Vaccination against Porcine Circovirus type 2 and *Lawsonia intracellullaris* in a two-site production system with subclinical manifestations of the microbes

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Introduction

The superior growth of SPF pigs has raised questions on the impact of subclinical infections on the growth of pigs. Vaccines have recently been registered for the common microbes Porcine Circovirus type 2 (PCV2) and *Lawsonia intracellullaris*. The present study aimed to scrutinise the relevance of vaccinating piglets against these microbes in a two-site production system with presence of these microbes, but without obvious problems with either of them.

Materials & Methods

The study was carried out in a piglet producing herd with 1,000 sows that farrowed in batches of 43 sows every week, and in a fattening herd recruiting full batches from the sow herd at an age of 11 weeks. The herds were free from clinical PMWS and proliferative enteritis, but PCV2 and Lawsonia were demonstrated by serology. All piglets in one farrowing batch were given a unique identity. Piglets in each litter were allotted into three groups. At four weeks of age, group A was vaccinated against PCV2 (Ingelvac Circoflex, BI-vet), group B against *Lawsonia* (Enterisol Ileitis, BI-Vet), and group C was left as an unvaccinated control. However, gilts had been vaccinated twice against PCV2 (Circovac, Merial), and all sows were revaccinated during pregnancy.

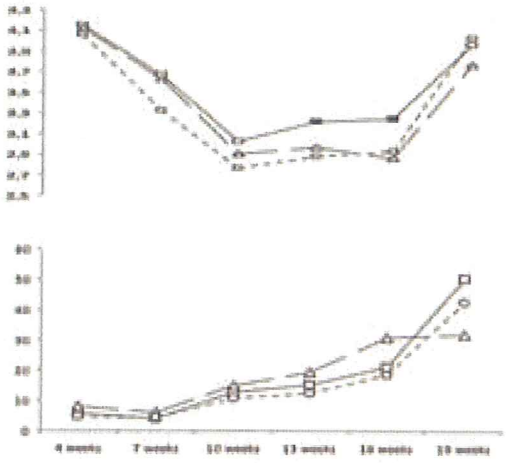
All pigs in the experimental batch were weighted at 4, 10 and 22 weeks of age. Blood was collected from ten pigs per group (from different litters) at 4, 7, 10, 13, 16 and 19 weeks of age. Serum was analysed for presence of antibodies to PCV2 by IPMA (1) and *Lawsonia* by a commercial ELISA (BioScreen, Münster, Germany).

Results

All piglets received a high maternal protection to PCV2. Piglets vaccinated for PCV2 increased the amount of antibodies to PCV2 at 13 weeks of age and the other groups at 19 weeks of age (Fig. 1). No pig showed any sign of PMWS.

All piglets were seronegative to *Lawsonia* at 4 weeks of age (Fig 1). At 16 weeks of age, three pigs vaccinated to *Lawsonia* were seropositive (PI>34) to *Lawsonia* compared to one pig in each of the other groups. At 19 weeks of age, three vaccinated pigs were still seropositive compared to 5 or 6 in the other groups. The mean PI-values never differed statistically between groups.

The growth rate was equal for the three groups from 4 to 10 weeks of age (Fig 2). The weight of the pigs was equal for also groups also at the age of 22 weeks.



Figur 1. Serum antibodies in pigs vaccinated against PCV2 (□) or Lawsonia (Δ), or left as controls (○). Different colours within day, p<0.05. Above: mean log titres to PCV2. Below: mean PI-values to Lawsonia

Figure 2

Body weights	Piglets vaccinated		
	PCV2	Lawsonia	Control
Weight (kg)	(n=152)	(n=150)	(n=142)
4 weeks	8.3±1.9	8.6±2.2	8.3±1.9
10 weeks	29.4±5.4	30.5±6.4	29.9±5.7
22 weeks	98.7±11.0	99.1±11.8	98.4±11.8

Discussion & Conclusions

Piglets vaccinated for PCV2 seroconverted between 10 and 13 weeks of age, indicating that PCV2 became activated at that time. However, antibody levels had not increased at 16 weeks in the other groups, indicating a low load of PCV2, presumably achieved by the vaccination of sows and the high amounts of maternal antibodies. Thus unvaccinated pigs seroconverted at a high age when they are less likely to develop PMWS.

Likewise, the serology indicated only a limited load with *Lawsonia* prior to 16 weeks of age. A protective role of the vaccine may be indicated by somewhat lower PI-values at 19 weeks of age in vaccinated pigs.

We saw no difference in weight gain between the three groups. Thus, vaccinations against PCV2 or *Lawsonia* with the aim of protecting recently weaned pigs in apparently healthy herds appear pointless, and a true significance of these microbes ought to be proven before expecting any effect in fattening enterprises.

References

1 Wallgren *et al.*, 2009. Acta Vet Scand. 51:13.