Effects of PCV2 vaccines on pig performance

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INTRODUCTION

Vaccination of pigs for PCV2 and *Mycoplasma hyopneumoni*a is a routine measure in pig production globally. In many cases vaccination for these two pathogens is done around weaning when piglets have to cope with many stressors. The pig's performance around weaning is critical for the later performance and the degree of variability after weaning has a substantial impact on the variability at the end of finishing. The objective of this trial was to determine whether the negative impact of a vaccine on the weight gain shortly after vaccination has an impact on the weight gain until slaughter. The first outcome of this study (weight gain 14 days after vaccination) was presented at the ESPHM 2015[1].

MATERIALS AND METHODS

The trial was conducted in a French farrow to finish 1,200 sows PRRSv negative farm. From weaning to slaughter the mortality rate in this farm is usually about 4 % and the feed conversion rate is around 2.55. The farm operates in a weekly batch system and weans piglets at about 3 weeks of age. After weaning, pigs are kept in a nursery unit on dry feed for about 3 weeks before they are moved to a rearing unit with liquid feed. In total, 1,158 pigs of 2 following farrowing batches were included in the study. One day before weaning, the piglets were weighed individually, randomly allocated to either Group 1 or Group 2 and marked individually with an ear tag. Piglets in Group 1 were vaccinated with Ingelvac MycoFLEX® (1 ml) and Porcilis PCV (2 ml, both products according to label instructions) whereas piglets in Group 2 received Ingelvac MycoFLEX® and Ingelvac CircoFLEX® (1 ml of each vaccine, both products according to label instructions). In addition, 10 non-vaccinated sentinel piglets per batch were included to assess the PCV2 infection status. The piglets were weighed again individually 14 days after vaccination (outcome presented at the ESPHM 2015). Average Daily Gain (ADG, weaning to slaughter) was calculated considering the number of days to slaughter. Data was analyzed using the statistical software Mintitab® (version 17). Data between the groups was compared using a t-test except losses using a x^2 test.

RESULTS

At inclusion mean body weights, sex ratio, parity as well as age were similar between the two treatment groups (Table 1). The PCV2 PCRs as well as the Elisa tests on the 10 sentinels indicates that the pigs did not get infected with PCV2 during the study.
In total, 28 pigs died during the study, 14 in each treatment group. The significant difference in ADG that was observed 14 days after vaccination was sustained until slaughter in favor of Group 2 (MycoFLEX® / CircoFLEX®) compared to Group 1 (MycoFLEX® / Porcilis PCV) (Table 2).

Table 1: Numbers, weight and parity at inclusion.

	Group 1	Group 2	p
N (at inclusion)	578	580	
Average age (days)	20.30	20.29	0.98
Parity average	2.96	2.93	0.79
Weight at inclusion (kg)	5.22	5.22	0.96

Table 2: Performance results of the two treatment groups.

	Group 1	Group 2	p
$ADG_{Weaning-35}$ (g / day)	199.7	216.3	0.00008
N losses	14	14	n.s.
$ADG_{Weaning-Slaughter}$ (g / day)	698.3	706.4	0.045

n.s.: not significant

DISCUSSION AND CONCLUSION

The outcome of this study indicates that the differences in local and systemic reactions between commercial PCV2 vaccines that can be observed shortly after vaccination have an impact on weight gain until slaughter. Since there was no evidence of a PCV2 circulation, this study demonstrates that the safety and not only the efficacy of a vaccine should carefully be considered when choosing a PCV2 vaccine as it might impact the overall pig performance.

REFERENCES

1. Bourguigon et al (2015) ESPHM: p194

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