

Comparison of three vaccination schemes against *M. hyopneumoniae* and PCV2



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INTRODUCTION

Mycoplasma hyopneumoniae (M hyo) and Porcine Circovirus type 2 (PCV2) are globally widespread pathogens in the swine industry and of high economic impact. Several vaccines are available to control both pathogens. To select a vaccination scheme among the others, the following points will be taken into consideration by the veterinarians and the farmers: efficacy, safety, ease of use. Concerning the ease of use, several options were developed in order to facilitate the vaccination work: combination of vaccines and antigens, needle free devices etc. The aim of this side by side study was to compare the impact of 3 vaccination programs against M hyo and PCV2 on piglet's performance shortly after vaccination and at slaughter.

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, 1,625 piglets of 3 following farrowing batches were included into the study. One day before weaning, piglets within each litter were allocated alternately and randomly to Group 1, Group 2 or Group 3, weighed individually and identified with an ear tag. Piglets in Group 1 were vaccinated with Ingelvac CircoFLEX[®] and Ingelvac MycoFLEX[®] freshly mixed (FLEXCombo[®]) using classical needles (1 ml each vaccine, IM). Piglets in Group 2 were vaccinated as well with Ingelvac CircoFLEX[®] and Ingelvac MycoFLEX[®] freshly mixed (FLEXCombo[®]) but using a needle free device (1 ml each vaccine, IM). Piglets in Group 3 were vaccinated with Porcilis[®] PCV (2 ml, IM) and Porcilis[®] M hyo ID Once (0.2 ml, ID). In addition, 10 non-vaccinated sentinel piglets per batch were included to assess the PCV2 and M hyo infection. The piglets were weighed again individually 14 days after vaccination. Average Daily Gain (ADG_{Weaning-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.

RESULTS

At inclusion mean body weights, sex ratio, parity as well as age were similar between the three treatment groups. The infection with PCV2 and Mhyo was confirmed for the sentinel animals. The level and the duration of PCV2 viraemia were variable between batches (from the end of the post-weaning or the middle of the fattening until the end of the fattening period). The circulation of M hyo, assessed by serology,

was mainly observed at the end of the fattening period, except for one batch where it was observed from the middle of the fattening period.

In total, 46 pigs died during the study. Forteen days after vaccination, the ADG was significantly higher in both groups vaccinated with FLEXCombo[®] compared to the group vaccinated with Porcilis[®] PCV and Porcilis[®] Mhyo ID Once. At slaughter, this difference was sustained and remained significant between Group 2 and 3. The non-significant statistical difference observed between group 1 and group 3 was probably due to the fact that more heavy piglets were missing at slaughter in group 1. (Table 1)

Table 1: Performance results of the three treatment groups

	Group 1	Group 2	Group 3
N (at inclusion)	540	542	543
Weight at inclusion (kg)	5.39	5.41	5.30
ADG _{Weaning-35} (g / day)	225.99 ^a	225.52 ^a	206.90 ^b
N (at slaughter)	478	460	453
N losses	18	14	14
Mean Weight at inclusion of missing pigs at slaughter (kg)	5,95	5,49	5,20
ADG _{Weaning-Slaughter} (g / day)	699.69 ^{ab}	703.29 ^a	693.35 ^b

Different superscripts (a and b) within the same row indicate a statistical significant difference (p < 0.05).

DISCUSSION AND CONCLUSION

In this study, the performance of pigs that were vaccinated with FLEXcombo[®], either administered via needles or with a needle-free device, was higher compared to pigs that were vaccinated with Porcilis[®] PCV and Porcilis[®] M hyo ID Once.

FLEXcombo[®] is not only easy to use (a single injection to control 2 pathogens) but also safe and efficacious through the whole fattening period.

