Evaluation of the effect of two different vaccine combinations against PCV2 and *Mycoplasma hyopneumoniae* (Mhyo) on physiological parameters

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INTRODUCTION

Body temperature, acute phase proteins (APPs) and weight gain are suitable indicators of stress, inflammation and well-being of pigs[1,2]. The aim of this study was to evaluate the physiological effects of 2 vaccine combinations against Porcine Circovirus type 2 (PCV2) and *Mycoplasma hyopneumoniae* (Mhyo) by measuring the body temperature, APPs and the Average Daily Gain (ADG).

MATERIALS AND METHODS

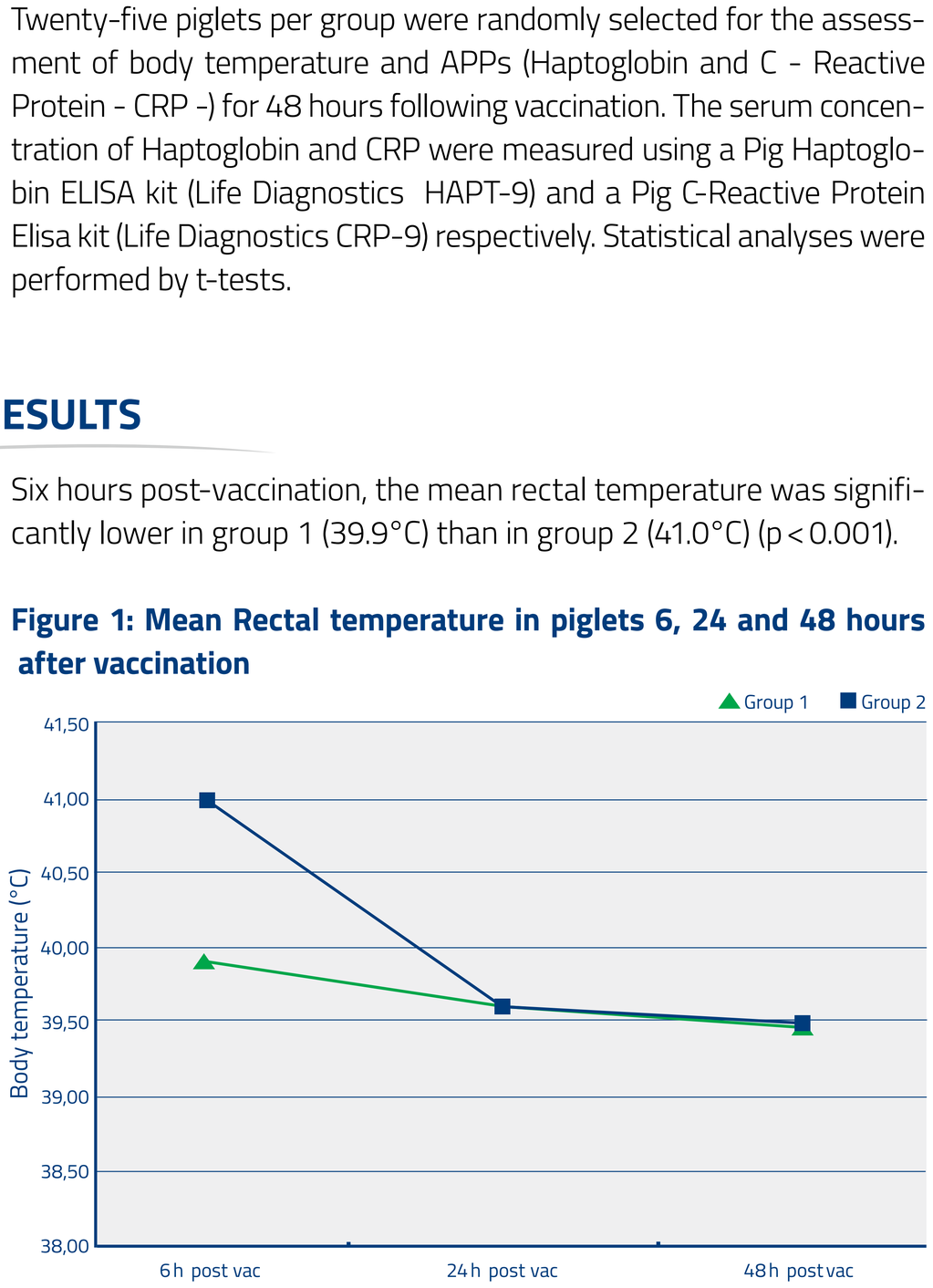
This trial was conducted in a farrow to finish 450-sow herd, weaning 21-day old piglets, located in West of France. Overall 1,289 piglets from 3 following batches were included in the study. One day before weaning, piglets were randomly allocated to Group 1 (629 piglets) or Group 2 (630 piglets), identified and weighed individually. In addition, 30 piglets (10/batch) were included as non-vaccinated sentinel animals. Group 1 was vaccinated with 2 ml of a freshly mixed preparation of Ingelvac CircoFLEX® and Ingelvac MycoFLEX® whereas Group 2 was vaccinated with 2 ml of a PCV2 and Mhyo fixed-combination vaccine. All piglets were weighted again 14 days after vaccination in order to calculate the ADG.

Twenty-five piglets per group were randomly selected for the assessment of body temperature and APPs (Haptoglobin and C - Reactive Protein - CRP -) for 48 hours following vaccination. The serum concentration of Haptoglobin and CRP were measured using a Pig Haptoglobin ELISA kit (Life Diagnostics HAPT-9) and a Pig C-Reactive Protein Elisa kit (Life Diagnostics CRP-9) respectively. Statistical analyses were performed by t-tests.

RESULTS

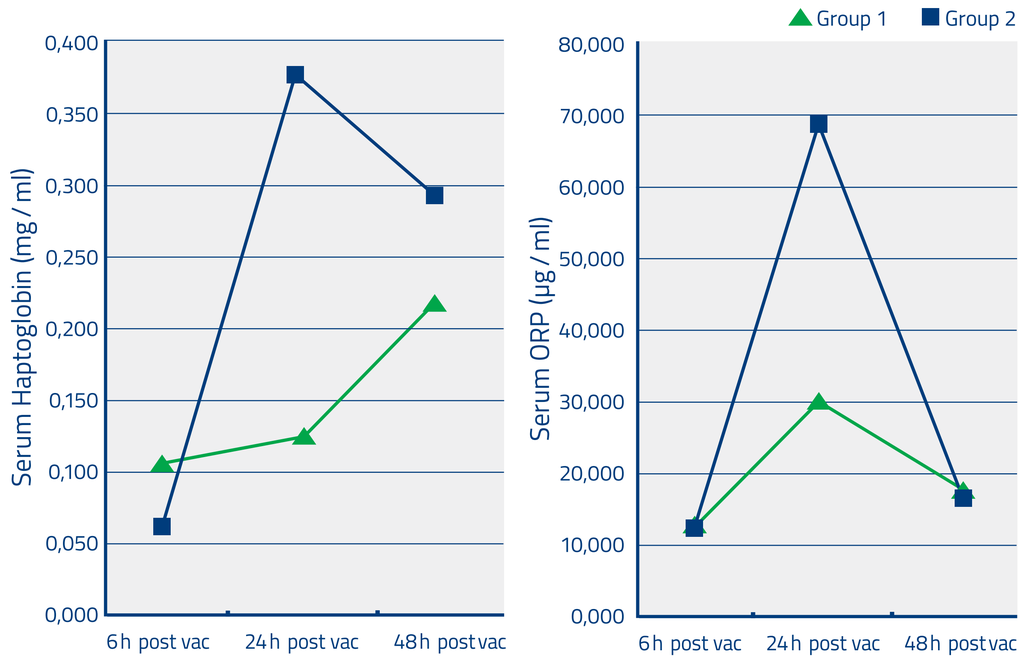
Six hours post-vaccination, the mean rectal temperature was significantly lower in group 1 (39.9°C) than in group 2 (41.0°C) ($p < 0.001$).

Figure 1: Mean Rectal temperature in piglets 6, 24 and 48 hours after vaccination



Concerning APPs, a significant difference was observed between the two groups 24 hours post-vaccination, in favor of group 1, for both Haptoglobin and CRP ($p < 0.001$).

Figure 2: APPs: Mean serum concentrations of haptoglobin and CRP in piglets 6, 24 and 48 hours after vaccination



Fourteen days after vaccination, the ADG was significantly higher in group 1 (192.5 g / day) compared to group 2 (182.6 g / day) ($p < 0.01$).

Table 1: Weight gain from vaccination to 14 days after vaccination (means, p-value)

	Group 1	Group 2	p
N (at inclusion)	629	630	/
Weight at inclusion (kg)	6,20	6,24	ns
Weight 14 days after vaccination (kg)	8,9	8,8	ns
ADG (g/day)	192,5	182,6	0,007

n.s.: not significant

DISCUSSION AND CONCLUSION

The outcome of this study is consistent with other trials showing that vaccines against PCV2 and Mhyo lead to different local and systemic responses[3,4]. It confirms that the selection of vaccines should certainly be based on efficacy but also on their effect on piglets' well-being.

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