Efficacy of one shot vaccination program against *Haemophilus parasuis* in nursery piglets

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Introduction

The causal agent of Glässer's disease, *Haemophilus parasuis*(HPS), is considered the most prevalent pathogen with the greatest economic loss during the nursery period along with the PRRS virus[1]. Vaccination in piglets is essential and feasible because colonies of HPS in piglets could induce diseases as colostral antibodies disappear and colostral antibodies do not interfere with vaccine activity in early age piglets[2]. Despite the popular practice of two shots(Day 7 and Day 21) in piglets for prevention of HPS, it was hypothesized that administrating piglets at 14 days of age only once may be also technically feasible considering that a considerable percentage of this disease are related to chronic effects including arthritis and polyserositis. Therefore, a trial was conducted to evaluate the efficacy of one shot program in nursery piglets with chronic HPS.

Materials and Methods

The selected farm for this trial was located in Henan Province with a sow of 2,000. It had an outbreak of PRRSV 6 months before this trial. HPS in nursery units has been diagnosed based on prevalent arthritis mixed with sporadic pleuritis and fibrinous pericarditis in diseased piglets. HIPRASUIS®-GLÄSSER,an inactivated vaccine recommended both for sows and piglets was chosen due to its proven efficacy in two shots program in piglets in Chinese farms. 2ml of HIPRASUIS®-GLÄSSER was given to one batch of 156 piglets at 14 days of age in farrowing unit. Another batch of 161 piglets of same age were used as control. The production parameters of piglets were recorded after being transferred to nursery unit at 28 days of age for 45 days. Statistical analyses were performed using the t-test.

Results

No adverse side-effects were observed after the use of HIPRASUIS®-GLÄSSER. Table 1 shows the production parameters obtained during the nursery period of 45 days. The percentage of morbidity in vaccinated group was significantly reduced compared with control group. Specifically, the number of piglets with arthritis, pleuritis, and fibrinous pericarditis were much less after vaccination. There was also a decrease in mortality in piglets after vaccination when compared with control group. In addition, the average daily weight gain in vaccinated group was 34g higher, though not statistically significant, than in control group for the whole nursery stage.

Table 1 The effect of vaccination on nursery parameters

	Control	HIPRASUIS GLÄSSER	Difference
Nursery period(day)	45	45	
N^{o} animals	161	156	
N^{o} sick animals	10	3	7
N^{o} dead animals	2	0	2
%morbidity	6.21^{a}	1.92^{b}	4.29
%mortality	1.18	0	1.18
Average start weight(Kg)	8.28^{a}	8.12^{a}	0.16
Average finish weight(Kg)	33.18^{a}	34.56^{a}	2.38
ADWG(g/day)	553^{a}	587^{a}	34

$^{a.b}$ values with different superscripts in the same row are statistically different($p<0.05$)

Conclusion

One shot vaccination with HIPRASUIS®-GLÄSSER, was demonstrated to be safe, efficacious and economically viable by reducing mortality, morbidity in affected piglets and increasing ADWG at the same time. Among other things, distinct serovar of HPS present in a herd was responsible for highly variable presentations of this disease[3]. While regular two shots vaccine program represents better protection across serovar and genotypes, this trial suggests that one shot strategy is financially attractive and technically sound in some mild cases of HPS. Further experiments are warranted to testify the feasibility of one shot program under other presentations of this disease.

References

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