

Evaluation of the serological effect of SUISENG® on preweaning diarrhea in a field trial

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INTRODUCTION

Escherichia coli (*E. coli*) and *Clostridium perfringens* type C (CpC) are the most important causes of diarrhea in piglets. In order to prevent economic losses from *E. coli* and CpC, many swine producers use an inactivated vaccine in sows. SUISENG® (Hipra, Spain) contains purified adhesion factors (F4ab, F4ac, F5 and F6), the heat labile toxin (LT) of *E. coli* and toxoid of CpC. The aim of this study was to assess the serological effect of SUISENG® under field conditions in South Korea.

MATERIALS AND METHODS

The study was carried out on a Korean farm with 600 sows with 15% diarrhea and around 10% mortality during lactation. The experimental groups consisted of 6 vaccinated sows and 4 control sows (30 piglets in a vaccinated group and 20 piglets in a control group). Sera from sows vaccinated with SUISENG® and with a placebo, and from their preweaners were used in this work. Testing was carried out using in-house ELISA supplied by Hipra. The Mann-Whitney test and t-test ($p < 0.05$) (SPSS statistics 20, IBM Corp., USA) were used for statistical significance.

RESULTS

The mean ELISA antibody titers against each antigen (IRPC) are shown in Tables 1 and 2. The tables show a clear distinction between the vaccinated group and the control group. Sows and their piglets in the vaccinated group had higher antibody titers against all fimbrial antigens and toxins.

Statistical differences were observed between the vaccinated and control groups.

Table 1. SOWS. Antibody titers against all fimbrial antigens and toxins in sows (mean IRPC) in each group

	2nd shot		Farrowing	
Antigen	SUISENG®	control	SUISENG®	control
F4ab	57.3	46.2	71.3	12.4
F4ac	45.9	40.3	64.2	36.5
F5	45.1	50.0	72.0	34.7
F6	37.3	11.0	44.3	8.7
LT	12.0	10.1	21.7	11.5
CpC	56.5	14.3	62.2	12.4

Table 2. PIGLETS. Antibody titers against all fimbrial antigens and toxins in piglets (mean IRPC) in each group

	2-3 days		1 week	
Antigen	SUISENG®	control	SUISENG®	control
F4ab	51.8	15.4	39.0	14.7
F4ac	50.4	19.2	44.2	20.2
F5	44.4	24.5	40.2	21.5
F6	42.6	10.4	36.1	8.3
LT	21.5	11.9	23.4	11.0
CpC	47.5	13.2	47.6	11.2

DISCUSSION

There was statistical significance in the F4ab, F4ac, F6 and CpC antibody titers of farrowing sows. There was also a significant difference in antibody titers against all antigens and toxins of 1 week-old-piglets. The results clearly demonstrate that SUISENG® induces the production of specific antibodies to the LT toxin and fimbrial antigens of *E. coli* and toxoid of CpC.

REFERENCES

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