

EFFICACY OF *E.COLI* AND *CLOSTRIDIUM NOVI* COMPLEX VACCINE IN WEANING RATE AND SUDDEN DEATH OF SOWS IN FIELD CONDITIONS

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INTRODUCTION

Sudden death of sows has become one of the vulnerable problems in swine production, and the confirmation rate of *Clostridium novyi* has increased in diagnostic centers. Substantial economic losses have been brought about not only by sow mortality, but also by neonatal diarrhea after the total ban of antibiotics in pre-mix feed additives. To improve this situation, SUISENG® (Hipra) containing fimbriae of *E.coli* and toxoids *Clostridium perfringens* type C and *Clostridium novyi*, has been applied in four farms since September 2016.

MATERIALS AND METHODS

Experimental farms have been divided in four different production sites, with 500, 980, 940 and 930 sows, respectively. In those farms, *Clostridium novyi* cases have been reported since March 2014. Formerly, nulliparous sows from each farm had been vaccinated with Neocolipor (Meril) four and two weeks before farrowing, and multiparous sows had been vaccinated four weeks before farrowing. Under these circumstances, SUISENG® was administered in four farms using the same vaccination protocol since September 2016. To evaluate the efficacy of the complex vaccine SUISENG®, sow mortality rates and weaned piglet performance before and after changing vaccines were assessed for two years.

RESULTS

Cases of sudden death in sows in those four farms occurred not only in the summer season but also during winter due to various stressor and environmental changes. After one year of vaccination with SUISENG®, the total number of cases of sudden death in sows per year decreased from 503 to 386. Especially, Farms B, C and D showed statistically significant differences, decreasing 11%, 39% and 31% respectively, compared with previous years.

Table 1. Sow mortality data from Sep 2015-Aug 2016 (Pre-vac; before using SUISENG®) vs. Sep 2016-Aug 2017 (Post-vac; after using SUISENG®).

FARM	Pre-vac; Sow death in Sep 2015~Aug 2016	Post-vac; Sow death in Sep 2016~Aug 2017	P-value
A	58	57	0,461
B	159	141	0,013*
C	117	71	0,047*
D	169	117	0,002*

*P-value < 0.05 (Paired student t-test).

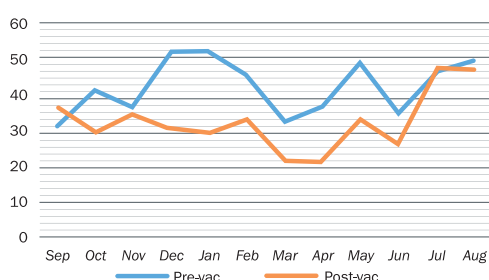


Figure 1. Number of sow deaths during Sep 2015-Aug 2016 (Pre-vac; before using SUISENG®) and Sep 2016-Aug 2017 (Post-vac; after using SUISENG®).

Regarding weaning rates, Farm C and D showed statistically significant differences, improving from 91.3% and 89.4% to 93.9% and 92.1%, respectively.

Table 2. Piglet weaning rate data from Sep 2015-Aug 2016 (Pre-vac; before using SUISENG®) with Sep 2016-Aug 2017 (Post-vac; after using SUISENG®).

FARM		Farrowing sows	Total piglets born	Weaned piglets	Weaned rate
A	Pre-vac	1,058	12,170	10,695	87.80%
	Post-vac	1,142	13,058	11,087	84.90%
B	Pre-vac	2,155	25,412	22,200	87.20%
	Post-vac	1,997	23,883	20,993	87.90%
C	Pre-vac	1,965	22,296	20,410	91.30%
	Post-vac	2,061	22,527	21,145	93.9%*
D	Pre-vac	2,018	22,694	20,270	89.40%
	Post-vac	1,956	20,779	19,082	92.1%*

*P-value < 0.05 (Paired student t-test).

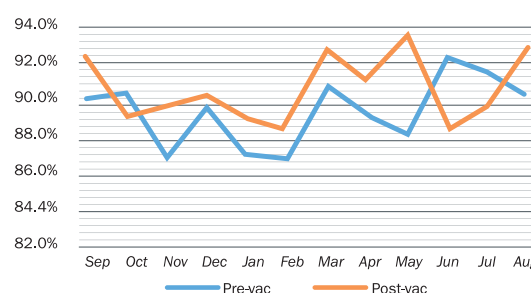


Figure 2. Piglet weaning rate during Sep 2015-Aug 2016 (Pre-vac; before using SUISENG®) and Sep 2016-Aug 2017 (Post-vac; after using SUISENG®).

CONCLUSIONS

Based on field data, the efficacy of SUISENG® in death of sows and in piglet weaning rates was confirmed. Vaccination with SUISENG® was especially efficient to maximize productivity and maintain the regular production schedule by reducing sudden death of sows.

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