

# DECREASING SOW MORTALITY AFTER VACCINATION AGAINST *CLOSTRIDIUM NOVI*

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## INTRODUCTION

*Clostridium novyi* has been shown to be a pathogen which can cause sudden death in breeding and fattening pigs, many cases of *Clostridium novyi* having been reported from different countries (1,2,3). Furthermore, using different diagnostic techniques, more cases of *Clostridium novyi* are confirmed in the samples from sows that have suffered sudden death (4). The aim of this study was to evaluate the impact of SUISENG<sup>®</sup>, (a commercial vaccine containing fimbriae and toxoids against *Escherichia coli*, *Clostridium perfringens* type C and *Clostridium novyi*) on the sow mortality rate after implementing a rolling vaccine program on a commercial farm in 2017.

## MATERIALS AND METHODS

A commercial farm with 3,900 sows, with a high mortality rate in South Korea, was enrolled in this trial. After the necropsy examination and laboratory diagnosis, *Clostridium novyi* and its  $\alpha$  toxin were isolated. Finally, the entire farm started vaccinating and revaccinating following the manufacturer's instructions. To evaluate the efficacy of SUISENG<sup>®</sup>, the sow mortality rate was compared between two different periods (A and B). Period A encompassed 2015 and 2016, when no *Clostridium novyi* vaccines were used. On the other hand, Period B included 2017 and 2018, when the farm started vaccination with SUISENG<sup>®</sup>. These periods were compared using a Wilcoxon test.

## RESULTS

Based on the historical data, the monthly mortality rate significantly decreased from 0.85% to 0.49% (p-value; 0.0006) when Period A and Period B were compared (Figure 1). This represents a reduction of 42% (Figure 2).

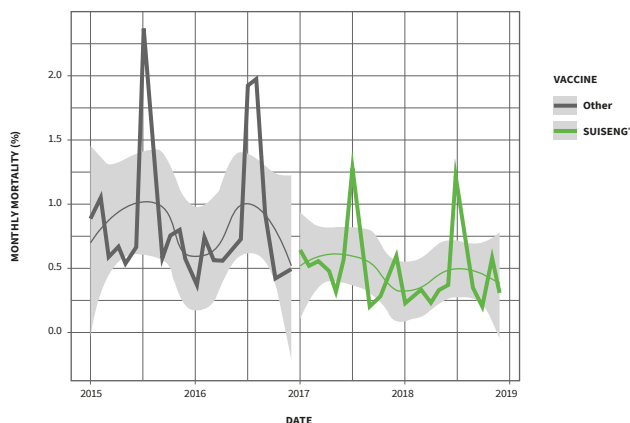


Figure 1. Evolution of the monthly mortality rate before and after vaccination.

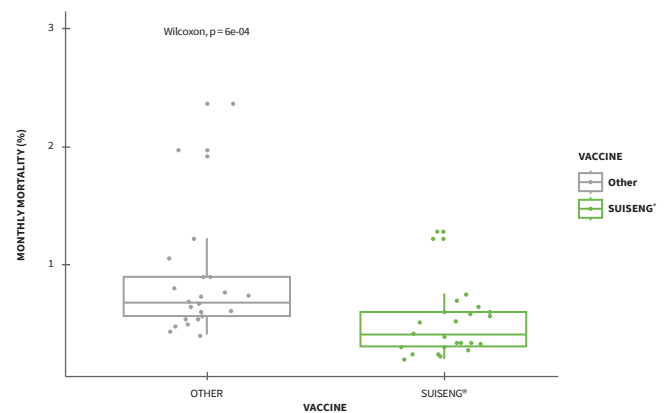


Figure 2. Average sow mortality rate in period A and period B.

After two years using SUISENG<sup>®</sup> (2017 and 2018), the reduction in mortality was up to 239 sows when compared with the period before vaccination (2015 and 2016). This represents a valuable improvement if we take into consideration the average cost of a gilt (350€) (5).

## CONCLUSIONS AND DISCUSSION

The decrease in mortality after implementing SUISENG<sup>®</sup> vaccination was significant. Therefore, the connection between decrease in mortality and the use of vaccine indicates that immunization against *Clostridium novyi* could be responsible for a significant reduction in the percentage of sow mortality cases. The ultimate objective of this reduction is to maximize productivity whilst maintaining a regular production schedule. Further studies should be performed to evaluate the return on investment of sow vaccination against sudden death.

## REFERENCES

1. Friendship CR, Bilkei G. Vet J. 2007;173:694–696
2. Noriko A, Tomoyuki S, Kazutada U, Haruna S, Itsuo K, Makoto O, JARQ 51 (1), 2017;85 - 89
3. Duran CO, Walton JR. Pig J. 1997;39:37–53.
4. Sasaki Y, Kojima A, Aoki H, Ogikubo T, Takikawa N, Tamura Y. Vet Microbiol. 2002;86:257–267.
5. Niemi Jarkko K et al. 2017