

DECREASE OF SOW MORTALITY RATE USING *Clostridium novyi* VACCINE (SUISENG®)

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INTRODUCTION

Clostridium novyi (Cn) is an anaerobic, spore-forming, gram-positive rod and ubiquitous bacteria in swine farms¹. Cn is a normal inhabitant of the posterior gut and liver of pigs³. However, during a disease outbreak, spores in the liver become vegetative and produce toxin. Cn has been associated with sudden death in sows¹. A correct diagnosis is depending upon the appreciation of the gross pathologic appearance, and an understanding of the factors of laboratory outcomes. This diagnosis is highly dependent on time, since toxin production produce a rapid decomposition of the carcass. Therefore diagnosis of Cn infection in sow is usually missed². Three avenues have been proposed for control of Cn infection². First is to prevent predisposing liver disease. Second is the use of antibiotics. Third is through vaccines^{3,4}.

Company located in Mexico had a historical high index of sow mortality. The objective of the study was to implement a *Clostridium novyi* vaccination (SUISENG® HIPRA) to diminish this mortality.

MATERIALS AND METHODS

The study was carried out in a farm with 3000 sows in Puebla state. An increase of sow mortality was reported during 2011 and systematic necropsies were performed in all sudden death sows. Clinical signs observed were submandibular edema, pulmonar edema, and serosanguineous exudate in the respiratory tract, so clinical signs compatible with a clostridial septicemia in adult animal¹.

In 2011, sows were vaccinated with a commercial coli vaccine which does not include Cn α toxine. In order to improve the situation of the sudden deaths sows they switched to SUISENG® in December 2011. SUISENG® is a polyvalent vaccine with two main indications, prevention of neonatal diarrhoea and, prevention of Sudden Death caused by Cn infection in adult animals. Sows were vaccinated at 30 days before farrowing and Gilts vaccinated and revaccinated gilts 60 and 30 days respectively.

RESULTS

After the SUISENG® implementation, sow mortality decreased significantly 4.6%. There were statistical differences between the 2011 and 2012 annual sow mortality rate ($p < 0,05$, t-test for independent samples).

Figure 1. Evolution of the average percentage of sow mortality rate by month during 2011 and 2012.

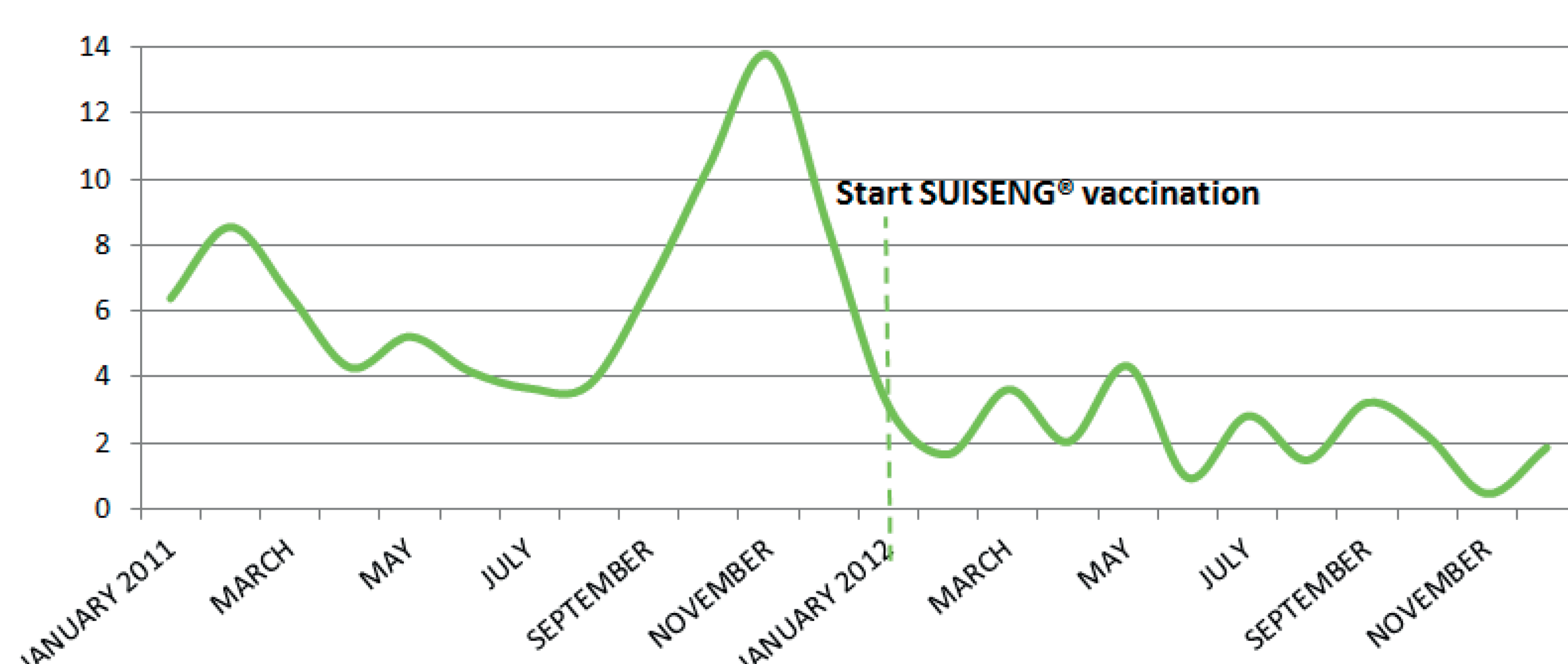
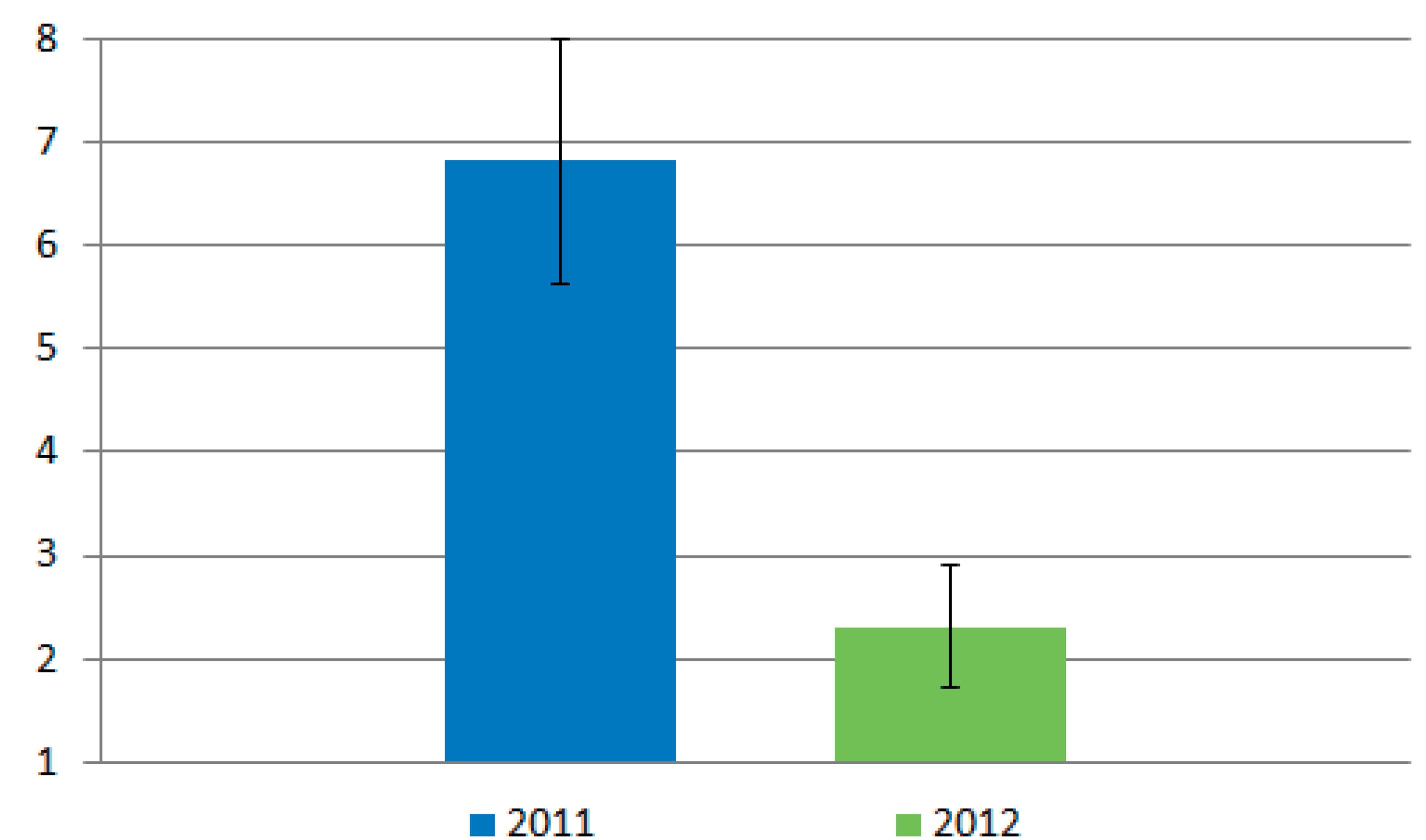


Figure 2. Annual mean percentage of sow mortality rate ($\pm$ SEM) at 2011 and 2012.



CONCLUSIONS AND DISCUSSION

The appearance of anatomopathologic findings suggested that the increase of sow mortality during 2011 was linked with a Clostridia infection. Laboratory diagnostic was not able to be performed, since in the labs of the area the Cn diagnosis was not available. Furthermore the culture of Cn is difficult and positive culture does not indicate that this is the cause of the problem, since Cn is a normal habitant of different tissues of the animal^{2,3}. Decrease of mortality after implementing SUISENG® vaccination was significant. Therefore the connection among decrease of mortality and the vaccine change indicates that Cn would be the main responsible of the sow mortality, since Cn is the only antigen in SUISENG® indicated for sows. Besides the efficacy of Cn inactivated vaccine to control sow mortality outbreaks has been demonstrated. Therefore vaccination with inactivated Cn vaccines is a primary measure to prevent high sow mortality rates in farms^{3,4}. Otherwise Cn laboratorial diagnostic should be improved in order to help in the differential diagnostic of sow mortality causes.

REFERENCES

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