The **Reference** in **Prevention** for **Animal Health**

CONTROL OF SOW MORTALITY BY *CLOSTRIDIUM NOVYI* VACCINATION IN ARGENTINA

Agosto[1], M.; Corletti[1], G.; Fernandez[2], S.; Boix[3], O.
**Corresponding author (oriol.boix@hipra.com)*
[1] SuperPorco S.R.L., [2] Hipra Argentina, S.A., [3] HIPRA, Amer (Girona) Spain.

INTRODUCTION

One of the most common problems faced in the field is the increase in sow mortality rates and therefore the economic impact that this represents. It is not unusual nowadays to find mortality rates that were considered unacceptable just a few years ago(1). *Clostridium novyi (Cl.noyvi)* is an anaerobic, gram-positive and alpha toxin-producing microorganism that causes porcine infectious necrotic hepatitis(2). Sudden death in sows is commonly seen during the peripartum period (near the end of gestation and during farrowing)(3). The aim of this study was to evaluate the impact of *Cl.novyi* immunization by using a commercial vaccine as a tool for the prevention of sudden death.

MATERIALS AND METHODS

The present study was conducted on a farrow to finish farm of 1050 sows located in Entre Ríos, Argentina, after it had reported an increase in the incidence of sow mortality. The average annual mortality rate in 2016 reached 8.48%. *Cl.novyi* presumptive diagnosis was made by carrying out systematic necropsies in which macroscopic lesions compatible with clostridium infections were found (enlarged liver, emphysema, swelling of the abdomen,...). The entire farm was then vaccinated and revaccinated, following the manufacturer's instructions, with SUISENG®, an inactivated vaccine containing *E.coli* fimbrial adhesins, the LT toxin, *Clostridium perfringens* beta toxin and *Cl.novyi* alpha toxin. The sow mortality rate was compared between two different periods, namely Period A from January 2016 to April 2017, (non-vaccinated period) and Period B from May 2017 to December 2019 (SUISENG® vaccination). Finally, a Wilcoxon test was performed to compare the two periods.

RESULTS

Based on the historical data, the average monthly mortality rate (Figure 1) was significantly decreased from 0.66% to 0.36% (Figure 2) (p-value; 0.0021) after the immunization of the herd. This represents a reduction of 45% in the mortality rate.

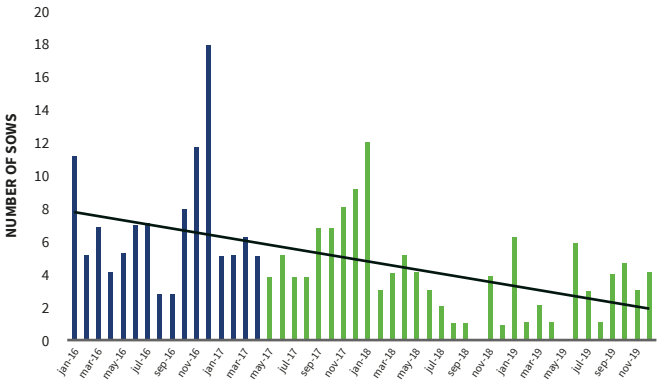

Figure 1. Progression of monthly mortality in Period A (blue) and Period B (green)

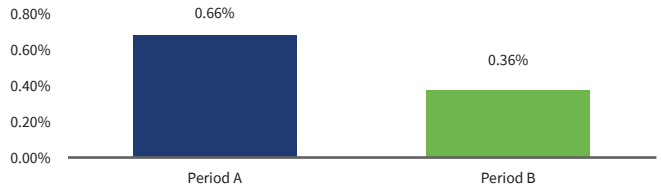

Figure 2. Comparison of the average monthly mortality rate between period A (blue) and period B (green).

CONCLUSIONS AND DISCUSSION

These results suggest that on this farm, *Clostridium novyi* was one of the main aetiological agents responsible for sow mortality. After the implementation of a vaccination programme against the alpha toxin, the mortality rate was significantly reduced(4). It is noteworthy that good diagnostic tools to detect the presence of *C.novyi* may form a key part of this process. Further studies should be performed to evaluate the role of *Clostridium novyi* in problems of sudden death in sows.

REFERENCES

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This poster in press belongs to approved proceedings to IPVS Congress 2020 to be held in Brasil, which has been postponed due to COVID-19.

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