



Evaluation of the efficacy of a *Clostridium perfringens* type A/C toxoid vaccine for pigs under laboratory and field conditions

Sven Springer, Regine Fricke, Olaf Bastert, Jacqueline Finzel, Thomas Lindner, Tobias Theuß, Volker Florian and Daniel Sperling

Ceva Sante Animale, Libourne, France. Contact: daniel.sperling@ceva.com

Introduction

The objective of the present trials was to test the efficacy of *Clostridium perfringens* type A (CpA) component of a licensed *Clostridium perfringens* type A/C toxoid vaccine under laboratory and field conditions.

Material and methods

In a laboratory trial, 30 gilts were randomly assigned to vaccine and control group. In vaccine group- gilts were vaccinated twice (Enteroporc AC, Ceva Santé Animale) at an interval of 3 weeks during the last third of gestation. Piglets (2 days of age) were challenged intra-abdominally with an alpha and beta2 toxin containing supernatant of a heterologous CpA strain. As follow up laboratory study, 12 basic immunized animals received a booster vaccination at two weeks before 2nd farrowing. In a field trial, piglets of 16 vaccinated and 18 control gilts were followed until 26 days of age.

Results

The vaccination elicited antibodies against both toxins, which were transferred to the offspring by colostrum. Piglets from vaccine group were significantly protected ($p < 0.05$) from clinical signs and mortality after a challenge. None of the piglets from vaccinated gilts showed serious clinical symptoms, died or had to be euthanized vs. control: 11/20 piglets died or had to be euthanized. A 3rd vaccination at 2 weeks before 2nd farrowing further increased antibodies in colostrum

($p < 0.05$) and in serum of the piglets compared to basic vaccination.

Vaccination under field conditions led to an increase of antibodies against alpha and beta2 toxins in the serum and colostrum of the gilts and resulted in a significant ($p < 0.05$) reduction of the incidence of diarrhea: total 38.7% of piglets (84/217) from vaccinated gilts with diarrhea vs. 62.6% piglets (161/257) from control gilts.

Pic. 1: Clinical symptoms and diarrhea caused by *C. perfringens* type A



Conclusions

The efficacy of the vaccine was demonstrated by the toxin administration model in a challenge trial as well as under field conditions.

Fig. 1: Significant reduction of diarrhea rate in vaccinated piglets compared with control (* $p < 0.05$, Fisher exact test, SPSS 15.0 for windows)

