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TITLE

BACILLUS-BASED PROBIOTIC REDUCES FAECAL EXCRETION OF CLOSTRIDIUM PERFRINGENS IN SOWS AROUND FARROWING

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CONTENT

Introduction

Clostridium perfringens is a major pathogen in pig production and associated with health problems and high economic losses. An unbalanced microbiota of the sows is often stated as a trigger for clostridia excretion in the farrowing pen. Aim of the trial was to investigate the effect of bacillus-based probiotic supplementation on *Clostridium perfringens* shedding in lactating sows under farm conditions.

Material and Methods

The observation (off-on-design) was conducted on a farm in Germany rearing 420 DanBred sows. Sows were fed standard diets based on wheat, barley and soybean meal according to the requirements given by GfE (2006). All sows received a bacillus-based probiotic (*Bacillus subtilis* + *B. licheniformis*, 3.25 x 10⁹ CFU/kg), dosed with 1000 g/t final feed during gestation and lactation period (Ø 26 d). At four different time points faecal samples were collected from sows (n = 8 per sampling day) at day 2 ± 1 after farrowing. Samples were incubated anaerobically in meat stock at 37°C for 24 h and then sub-cultivated on blood agar plate. Species identification was performed by MALDI-TOF MS and further typing by PCR. Statistical analyses were performed by ANOVA.

Results

Probiotic supplementation reduced faecal *Clostridium perfringens* from 5.63E+06 CFU/g to 1.71E+05 CFU/g (P < 0.05). Major toxin Alpha formation was detected by PCR. A numerically reduction in sow mortality (sudden death) by -90% and a decreased incidence of diarrhea in suckling piglets could be observed.

Discussion and conclusion

During trial period, a significant reduction of faecal *Clostridium perfringens* could be observed. It can be assumed, that a reduced shedding of *Clostridium perfringens* reduced pathogen transmission within the farrowing pen, which might lead to a lower incidence of suckling piglet diarrhoea. The supplementation of bacillus-based probiotics may decrease Clostridia counts in feces, which was already proven in different in-vivo and in-vitro trials.