



BACTERIAL DISEASES

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POSITIVE ECONOMIC EFFECTS OF LIVE *E. COLI* F4 VACCINATION FOR THE PREVENTION OF F4-ETEC POST-WEANING DIARRHEA IN PIGLETS AND FATTENING PIGS

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Introduction

Post-weaning *Escherichia coli* diarrhea (PWD) remains a major cause of economic losses for the pig industry. PWD, caused by enterotoxigenic *E. coli* (ETEC), typically provokes mild to severe watery diarrhea (5-10 days post-weaning). Most common adhesins on ETEC from PWD are the fimbriae F4 (previously called K88) and F18. An oral live bivalent *E. coli* F4/F18 vaccine (Coliprotec® F4/F18; Prevetec Microbia) is available, which reduces the impact of PWD provoked by F4-ETEC and F18-ETEC. The objective was to compare technical results of *E. coli* F4/F18 vaccination with previous standard therapeutic approach under field conditions.

Materials & methods

A 600-sow farm with diagnosed problems of PWD due to F4-ETEC was selected. Piglets were vaccinated at 18 days with the oral live bivalent *E. coli* F4/ F18 vaccine. At weaning, no standard group medication (antibiotics) was applied for prevention of PWD. Several performance parameters were collected before (n=17000 pigs) and after implementation of the vaccination (n=16500 pigs): ADG, feed cost, days in nursery, FCR and mortality for the nursery phase; ADG, mortality and value reduction at slaughter (€/pig) for the fattening phase.

Results

Oral *E. coli* F4/F18 vaccination significantly reduced the mortality rate ($P<0.05$) for both the nursery (3.5% to 2.6%) and fattening phase (4.7% to 3.3%) in combination with a decrease in number of days in nursery (-3 days; $P<0.05$). Production parameters were identical before and after the vaccination. Results induced a positive ROI (+2.69).

Discussions & Conclusions

The results show that live *E. coli* F4/F18 vaccination against PWD has led to similar technical performance parameters, in combination with a significant reduction in mortality rate (nursery and fattening) and a positive ROI. In conclusion, control of PWD through vaccination is a good option to prevent piglets from the negative clinical outcomes of post-weaning F4-ETEC infection.