BACTERIAL DISEASES

BBD-076

VACCINATION WITH A LIVE BIVALENT *E. COLI* F4/F18 VACCINE RESULTS IN ANTIBIOTIC REDUCTION WITH IMPROVED GROWTH AND FEED CONVERSION RATE

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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 and mortality (5-10 days post-weaning). Most common adhesins on ETEC from PWD are the fimbriae F4 and F18. Therapy to control PWD typically consists of antibiotic treatment in combination with high doses of ZnO (3000 ppm). Recently, an oral live bivalent *E. coli* F4/F18 vaccine (Coliprotec® F4/F18; Prevtec Microbia) is available on the European market, 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 700-sow farm (weaning at 21 days) with diagnosed problems of PWD due to F18-ETEC was selected. Piglets (n=3039) from 3 consecutive weaning batches were vaccinated at weaning with the oral live bivalent *E. coli* F4/F18 vaccine and compared to controls (n=4341) from 4 consecutive weaning batches. In the vaccinated groups, no standard group medication (3000 ppm ZnO or colistin) was applied. Several performance parameters were collected: weight at d0-50, FCR, mortality, ADG and medication use (TI_{100}).

Results

Oral *E. coli* F4/F18 vaccination significantly reduced the mortality rate (3.15% to 1.65%) and the TI_{100} by 90% ($P<0.05$). Production parameters significantly improved ($P<0.05$), with +22 g/d in ADG and -0.06 in FCR between control and live *E. coli* F4/F18 vaccinated piglets.

Discussion & Conclusions

Vaccination against PWD has led to better technical performance parameters, in combination with a reduction in the mortality and a significant reduction in medication use. In conclusion, control of PWD through vaccination is a good option in order to prevent piglets from the negative clinical outcomes of F18-ETEC infection during the post-weaning period.