



BACTERIAL DISEASES

BBD-025

SCREENING OF SEVERAL ALGAE IN WEANED PIGLETS' FEED TO COUNTERACT THE EXPERIMENTAL *ESCHERICHIA COLI* K88 INFECTION AND POST-WEANING DIARRHEA

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Introduction

Colibacillosis is a major cause of illness and death in weaned pigs. Antibiotics and antimicrobials (Zn or Cu) in piglets starter diets control this incidence. The ban of AGP offers an opportunity for new strategies of prevention. The study determined the efficacy of several algae against the challenge with *Escherichia coli* K88 in weaned piglets.

Material & Methods

The study lasted 14 days, had a randomized complete block design, using 56 weaned piglets in 4 treatments (Basal Diet -BD-, BD plus algae APSA108005 or APSA103017 or APSA102026 at 0.2%). Oral challenge with 5×10^8 CFU *E. coli* K88 was performed on day 4. Performance and diarrhea were assessed daily. Fresh feces were collected to determine presence of K88. On day 14, caecal, ileal contents and ileal mucosa scrapes were collected from one piglet per pen for microbiota and gene expression of immunological markers (qRT-PCR).

Results

APSA108005 and APSA103017 numerically outperformed Control group. *E. coli* K88 counts in feces and the number of positive samples were lower in APSA108005 (29% vs 86% for BD on day 5 after challenge); from ileal and cecal contents APSA103017 and APSA102026 supplementation reduced K88 counts (0.5 log units). The expression degree of cytokines and cell-surface-proteins were higher in algae groups compared to BD (between 0.1 to 0.6 relative units). The OTUS profiles from ileal content samples, showed an increase of *Lactobacillus* spp. in APSA108005 group. Significant differences in the global microbiota profile were observed in APSA108005 or APSA102026.

Discussion & Conclusion

The algae supplementation during the 14 first days weaning may have a prebiotic effect controlling *Escherichia coli* K88 diarrheas, stimulating the immune system associated to intestinal mucosa and inducing changes on digestive microbiota. 14 first days algae supplementation in weaned piglets diets could be an alternative to antibiotics and have potential to improve animal performance.