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TITLE

POSITIVE EFFECT OF PORCESTIN ON ZOOTECHNICAL PARAMETERS (AVERAGE DAILY FEED INTAKE AND GROWTH) AND GUT HEALTH PARAMETERS (ILEAL VILLI LENGTH AND TOTAL ANTIOXIDANT CAPACITY) OF WEANED PIGLETS

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CONTENT

Background and Objectives

The increasing need for antibiotic reduction in swine production implied the development of alternatives. Therefore, short- and medium-chain fatty acids (FA) have been extensively studied due to their supporting effect on piglet's growth and gut health. FA can be protected via glycerol esterification in order to obtain an even release of their free forms along the entire small intestine. This study investigated the dietary effects of Porcestin (mixture of esterified FA) on growth performance, mortality rate and gut health.

Material & Methods

The study used 192 weaned Topigs piglets (24 days old, average weight 8.41 ± 1.90 kg), which were randomly allocated to one of three treatments with 16 replicates per treatment (4 piglets/replicate): T1 (neither antimicrobials nor FA), T2 (400 mg/kg amoxicillin) and T3 (5 kg/ton Porcestin). The feeding scheme was divided in a prestarter (0-14 days) and starter phase (15-42 days). T2 diet was only administered during prestarter phase. Piglets were individually weighed at weaning, 14, 28 and 41 days after weaning. Average daily feed intake (ADFI), growth (ADG), feed conversion ratio (FCR) was calculated and mortality numbers were recorded. Morphometrical analysis, inflammatory parameters (IL-6, IL-10) and total anti-oxidant capacity (TAOC) assessment was performed on small intestinal mucosa.

Results

ADFI and ADG were significantly higher in T3 between days 15 and 41 ($P < 0,05$). FCR and mortality ratio was similar in all groups. Morphometric analysis indicated a significant longer average ileal villi length in T3 ($P < 0,01$). TAOC was significantly higher in T3 ($P < 0,01$). No significant effect on the inflammatory parameters was observed.

Discussion & Conclusion

Porcestin had a positive effect on the porcine gut health, protecting the intestinal epithelium from oxidative stress caused by weaning. Moreover, Porcestin enhanced piglet's growth performance, supported by the increase of the ileal villi length which enlarged the nutrient absorption surface.