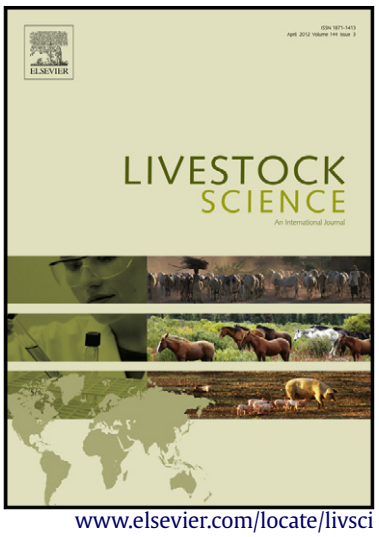

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Effects of dietary supplementation with benzoic acid on intestinal morphological structure and microflor in weaned piglets[1]

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ABSTRACT: A total of 72 weaned pigs [(Yorkshire × Landrace) × Duroc] with an average BW of 6.03±0.78 kg (24 d of age) were used in a 42-d trial to explore the potential mechanisms of dietary benzoic acid on gut health in weaned pigs. Pigs were randomly allotted to two groups with six replications per group and fed with a basal diet (control) or basal diet supplemented with 5000 mg/kg benzoic acid (benzoic acid).The results showed that benzoic acid supplementation decreased the pH values of the digesta in the colon on 14th day and in the ileum and cecum on 42nd day of pigs ($P< 0.05$). The number of *Bifidobacterium* in ileum and *Bacillus* in cecum of pigs fed benzoic acid diet were greater than pigs fed the control diet on 14th day ($P< 0.05$), the number of *Escherichia coli* in ileum and cecum on 42nd day were decreased in pigs fed benzoic acid diet ($P< 0.05$), the number of *Enterococci* in ileum were decreased on 14th and 42nd day in pigs fed benzoic acid diet ($P< 0.05$). When compared with control, benzoic acid increased the content of propionic acid and total VFA in cecum on 14th day ($P< 0.05$), decreased the concentrations of NH_3-N in cecum on 14th day and 42nd day ($P< 0.05$). The villous height in duodenum and ileum on 14th day were greater in pigs fed benzoic acid diet($P< 0.05$), benzoic acid increased villous height in ileum on 42nd day ($P< 0.05$), decreased crypt depth in duodenum on 14th day ($P< 0.05$), and increased the villous height:crypt

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