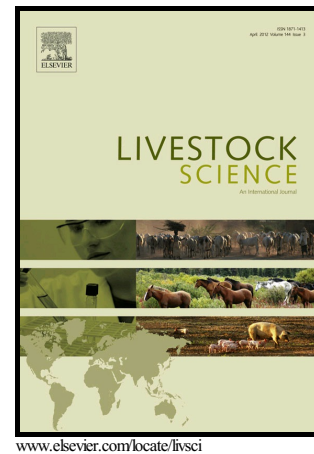


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Effects of dietary supplementation of *Enterococcus faecium* on growth performance, intestinal morphology, and selected microbial populations of piglets

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ABSTRACT

The objective of the study was to investigate the effects of dietary supplementation of *E. faecium* on growth performance and intestinal health of 35- to 70-d-old piglets. Two hundred fifty-five 35-d-old crossbred (Duroc × Landrace × Large White) piglets were randomly assigned to 5 treatments with 3 replicates of 17 pigs per pen. The treatments were basal diet (control), basal diet supplemented with antibiotics (8 mg flavomycin and 90 mg arsanilic acid/kg), and basal diet supplemented with *E. faecium* preparation (2×10^{10} cfu *E. faecium*/g) at the dose of 100, 300, and 500 mg/kg diet. The average daily gain (ADG), average daily feed intake (ADFI), gain to feed ratio (G:F), and diarrhea index were determined during the entire experimental period. At the end of the experiment, 6 pigs from each treatment (2 per pen) were euthanized, and the gastrointestinal pH, small intestine morphological traits, and selected intestinal microbiota populations were determined. The ADG and ADFI tended to be improved with the increasing doses of supplemented *E. faecium* or the added antibiotics ($P = 0.053$ and 0.072 , respectively), while G:F was linearly or quadratically improved ($P < 0.05$) and the diarrhea index was linearly or quadratically decreased ($P < 0.01$) as *E. faecium* supplemented increased. Furthermore, the pH in the stomach, duodenum, jejunum, and cecum decreased ($P < 0.05$) linearly and quadratically as *E. faecium* supplemented increased. The villus height and villus-to-crypt ratio (V:C) of jejunum were increased ($P < 0.05$) in piglets receiving *E. faecium* preparation in diet than those fed the basal diet and antibiotic

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