

Multi-strain microbial fermented soybean meal

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Effect of multi-strain microbial fermented soybean meal on growth performance, serum profile and intestinal physiological status of weaned piglets

Abstract

The objective of this study was to use multi-strain microbial fermented soybean meal (FSM) as carrier of probiotics in order to investigate the effect of FSM on

growth performance, serum profiles and intestinal physiological status of weaned piglets.

In Experiment 1, a total of sixty piglets was randomly allotted into five dietary treatments: Control treatment (basal diet); Probiotics 1 (P1), the basal diet + P1 FSM (fermented by *Lactobacillus acidophilus*

, *Bifidobacterium thermophilum*, and *Aspergillus oryzae*); Probiotics2 (P2) the basal diet + P2 FSM (fermented by *Streptococcus thermophilus*

, *Bifidobacterium thermophilum* and *Bacillus subtilis*

); Probiotics3 (P3), the basal diet + P3 FSM (fermented by *Lactobacillus acidophilus*

, *Enterococcus faecium* and

Saccharomyces cerevisiae

); and in Probiotics 4 (P4) the basal diet + P4 FSM (fermented by *Enterococcus faecium*

, *Saccharomyces cerevisiae*

and

Bacillus subtilis

).

In Experiment 2, sixteen pigs were allocated into two treatments: Control and FSM (FSM fermented by

Enterococcus faecium

, *Saccharomyces cerevisiae*, *Bacillus subtilis*, *Lactobacillus acidophilus*

, and

Bifidobacterium thermophilum)

. In Experiment 1 pigs fed P2 and P3 had higher average daily gain (ADG) overall. In Experiment 2 FSM increased total volatile fatty acid (VFA) and lactic acid concentration in caecum. Moreover, both aerobic and anaerobic microflora in duodenum as well as ileum increased through FSM administration. Piglets fed with FSM not only showed lower numbers of

Escherichia coli

in both jejunum and caecum, but also higher *Lactobacillus* in duodenum, jejunum and caecum. In conclusion, dietary FSM supplementation had a beneficial effect on growth performance and intestinal microflora regulation of weaned piglets. However, these effects may be dependent on probiotic combinations.

Key words:

Blood traits, microflora, probiotics

Source

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