

Influence of dried *Bacillus subtilis* and lactobacilli cultures on intestinal microflora and performance in broilers

ABSTRACT

Two hundred 10-day-old, male Arbor Acres broiler chicks divided randomly into 4 groups of 50 chicks each were used. Different feeding treatment was carried out for each group. Chicks in treatment 1 were fed a basal diet (Starter feed) (control); treatment 2, a basal diet + 0.1% *B. subtilis* culture; treatment 3, a basal diet + 0.2% lactobacilli culture in the feed; and treatment 4, a basal diet + 5 g lactobacilli in the drinking water. The viable bacterial counts for each treatment were approximately 10⁹ cells/kg feed. The weight gain in chickens given feeds incorporated with *B. subtilis* and lactobacilli was significantly ($p < 0.05$) higher than those of the control. With regard to feed efficiency, there was a definite tendency towards a higher feed : gain lower ($p < 0.05$) feed : gain ratio. A significantly ($p < 0.05$) larger population of *Lactobacillus* was found in the small intestine of chickens fed with feed incorporated with *B. subtilis* at 21 and 28 days and with lactobacilli at 14, 21 and 28 days. Populations of intestinal *E. coli* in broilers given feed added with *B. subtilis* were not significantly ($p < 0.05$) different from those of the control, but in chickens fed lactobacilli-added feed, their populations were significantly lower ($p < 0.05$) at 14 and 21 days. No significant differences were found among the treatments and the control in the occurrence of *Salmonella* and *Campylobacter* during the whole experimental period.

Keyword: *B. subtilis*; Broiler; *Lactobacillus*; Pathogenic bacteria; Performance; Probiotic