

**EFFECT OF DIETARY PROBIOTICS,
PHYTOBIOTIC, PROBIOTIC
COMBINATION COMPARED TO
ANTIBIOTIC GROWTH PROMOTERS ON
LAYER BREEDER PERFORMANCE**

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by

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Abstract

The study was conducted to determine the effect of dietary probiotic (*Bacillus species*) and phytobiotics (turmeric and coriander), probiotic combination and antibiotic (flavomycin) on layer performances, egg quality, breeder performance (hatchability) and gut health (serum antibody development against alpha toxin of *Clostridium perfringens*) of indigenous layer breeder chickens. A total of two hundred forty Karandagolla, Central Poultry Research Station indigenous layer breeders were assigned to twenty four deep litter cages with 10 females and 1 male. Layer breeders were randomly assigned to four treatments: each replicated six times. Negative control group (T₁) was fed with basal feed and other treatments were prepared by supplementing basal diet with: flavomycin (0.05%) in positive control group (T₂), *Bacillus species* (0.05%) in treatment 3 (T₃), a combination of *Bacillus species* (0.05%), turmeric (0.05%) and coriander (0.05%) in treatment 4 (T₄). Data were collected from 3rd week up to 7th week of experimental period. The results of the study indicated that the hatchability improved ($p < 0.05$) in, dietary probiotic and also probiotic, phytobiotics combination fed birds compared to the birds fed with antibiotic and without growth promoters. Egg yolk colour improved ($p < 0.05$) in probiotic and phytobiotics combination compared to the birds fed all three treatments. Low alpha-toxin antibody levels in blood indicated, dietary probiotic and also Probiotic, phytobiotics combination reduced the *Clostridium perfringens* infection in indigenous layer breeders marginally than in birds fed without growth promoters and with antibiotics. Layer performance (egg weight, Hen Day Egg Production (HDEP), egg mass index, feed efficiency) and egg quality parameters other than the yolk colour (pH, gross energy content, protein content and dry matter content) were not affected ($p > 0.05$) with any treatment diets. It can be concluded dietary antibiotics do not improve the performances of indigenous layer breeders and dietary probiotic and phytobiotics combination can be used as feed additive compared to antibiotic growth promoters for improvement in hatchability, yolk colour and lowering the *Clostridium perfringens* infection in indigenous layer breeders.

Keywords: Antibiotics, growth promoters, hatchability, indigenous layer breeder, phytobiotics, probiotic