

## Utilization of Plant Bioactives as Feed Additives for Laying Hens

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### ABSTRACT

Feed additives are commonly used to improve the productivity and feed efficiency in poultry. Antibiotic is the most common feed additive used till now, although some developed countries have banned the use of it. The use of plant bioactives to replace antibiotics are now widely investigated. *Curcuma longa* (CL) and Java *curcuma*, *Curcuma xanthorrhizol* (CX) or *Turmeric* are commonly used by human and known to have active ingredients as antimicrobial. A research was conducted to evaluate the possibility of using these plant bioactives to replace antibiotic in poultry feed. The bioactives concentration of the CL and CX powder were measured prior to the feeding trial and then supplemented into standard diets of laying hens. The levels tested in this trial were based on the active ingredients that could inhibit growth of bacteria and fungi, i.e., low, medium and high levels of the CL and CX, respectively. The combination of low level of CL + high level of CX and low level CL + medium level of CX were also tested. A diet without feed additives and with antibiotics were used as controls. The test diets were fed to laying hens aged 48 weeks and the performances were monitored for 16 weeks. Results showed laying hens given high level of CX produced significantly ( $P < 0.05$ ) higher HD egg productions, better FCR and yolk colour score than the control and those given antibiotics. These improvement, however were not associated with reduction of microbes population in the ileal neither with the increasing of the immunity as shown by the Haemagglutination Inhibition (HI) titre.

Key words: Laying hens, *Curcuma xanthorrhizol* and *Curcuma longa*