

PHYTOBIOTIC POTENTIAL OF TURMERIC (CURCUMA LONGA LINN.) RHIZOME MEAL ON THE PRODUCTION PERFORMANCE AND CELL MEDIATED IMMUNITY OF BROILER CHICKEN

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Abstract

Resistance to microbial organisms has ignited the quest for natural substitutes to antibiotic growth promoters in production of poultry, thus creating a significance in advocating sustainability in broiler production without the presence of microbes. The aim of this study stressed the evaluation of the effects of TRM, Turmeric Rhizome Meal, which serves as a phytobiotic alternative, defined as a synthetic antibiotic on the following: growth performance, carcass yield cell-mediated immunity, and the feasibility on economic factors of broiler chickens. Consequently, a number of 100 broilers were selected randomly into five dietary treatments as supplemented with varying levels of TRM: T1, Commercial Feed without TRM; T2, Homemade Ration without TRM and Synthetic Antibiotics; T3, Homemade Ration with Synthetic Antibiotic. These four treatments were reared for 38 days in a fully randomized design of experimental setup. Results and findings showed that TRM supplementation has significantly improved body weight, weight gain, and FCR, specifically in the early growth phases, that is within 11 to 24 days. In the same manner, broilers fed with 1-3% TRM for T3 and T4 revealed superior growth performance as well as its feed efficiency as compared with both the control and anti-supplemented group. Additionally, improved spleen and bursa indices had shown stronger cell-mediated immunity, which in turn affirms the immunomodulatory potential of curcumin, the classified active compound in turmeric. However, in which way the carcass yield showed no significant difference, economic analysis expounded higher profitability in 1% and 3% TRM treatments, signifying the highest return on investment, ROI with values of 76.01% and 74.95%, respectively. As an ultimatum, TRM serves as an effective and sustainable phytobiotic feed additive that develops growth, feed utilization, immunity, and profitability in broiler production. Last, future studies are recommended in determining the optimal TRM inclusion levels, evaluating bioactive compound stability, and analyzing the costs and benefits under various production conditions.

Keywords: *antibiotics, phytobiotic feed additives, turmeric rhizomes, broiler production, carcass yield, cell-mediated immunity, return on investment, randomized design experimental setup, feed efficiency, spleen and bursa indices, curcumin, TRM inclusion levels, bioactive compounds.*