

# Effect of Dietary Supplementation of Organic Acid on Production Performance and Gut Health Status in Broiler Birds

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**Abstract**—An experiment was conducted to study the effect of using butyric acid (BA) an organic acid to substitute antibiotic growth promoter (AGP) on performance and intestinal microflora. Two hundred (200) day old broiler chicks were housed and distributed randomly in to twenty groups each of 10 chicks (4 treatments×5 replicates). The experiment had a randomized block design. Birds were allowed to eat and drink *ad libitum*. A basal corn-soybean meal diet were formulated and served as a control treatment. Four experimental diets T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub> were formulated to contain an additional 0, Bacitracin Methylene Disalicylate (BMD) @ 20mg, 0.3 and 0.4% BA /kg diet, respectively. Production performance in terms of body weight gain (g) was increased ( $P<0.05$ ) by the feeding of diets containing different levels of BA but feed intake (g), feed conversion ratio (FCR) and mortality (%) did not differ significantly ( $P>0.05$ ). Significant reduction was observed in coliforms and lactobacillus counts in cecal digesta (28 and 42 d) and excreta (42 d), whereas total plate counts (TPC) at 42 d were significantly reduced in BA supplemented groups compared to other groups. From the above said results, it can be concluded that, BA could be a good alternative to antibiotic growth promoters for production performance and gut microbial status in broiler chickens.

**Keywords:** Butyric acids, antibiotic, broiler, performance, intestinal bacteria