



## Response of Broiler Chickens to Diets Containing Different Levels of Natural Bioactive Mixture Composed of Lemon, Onion and Garlic Juice

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**Abstract :** This work was conducted to study the effect of inclusion natural bioactive mixture composed of lemon, onion and garlic juice (LOG) at portions (0.125: 1.00: 1.00/ liter clean water) on growth performance and economic evaluation of broiler chicken. A total of 208 one-day-old straight run chicks were housed in batteries and distributed to 16 replicates, with 4 treatments. The experimental rations were classified as control (T<sub>1</sub>) and three different levels of LOG 10, 20 and 30 ml LOG/ kg feed (T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub>), respectively. Starter ration contained 23.2% CP and 3045 Kcal ME/Kg diet, grower ration contained 22% CP and 3164 Kcal ME/Kg diet and finisher ration contained 20% CP and 3220 Kcal ME/Kg. The results showed that LOG is a good quality source of essential and non essential amino acids and a good source of macro and micro elements. Inclusion natural bioactive mixture (LOG) in broiler chick diets had no significant (P>0.05) effect on final weight, total body weight gain, total feed intake and feed conversion. Mortality rate was decreased with increasing level of inclusion LOG in the rations (5.77, 5.77, 3.48 and 1.92% for T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub>), respectively. Marketing weight, net revenue and relative economic efficiency for T<sub>2</sub> and T<sub>3</sub> were improved compared to control one (T<sub>1</sub>). Although feed cost (LE) per (Kg live body weight) was slightly increased with adding LOG in broiler chick rations at 10 or 20 ml/ kg feed relative economic efficiency was slightly improved by 100.7 and 101.1 % for T<sub>2</sub> and T<sub>3</sub> compared to control (T<sub>1</sub>). The present results mentioned that, under conditions similar to those available in this study, it can be conclude that, natural bioactive mixture composed of lemon, onion and garlic juice (LOG) can be used to improve the utilization of broiler chick ration, health and their gains. Also, it must be noted that the suitable level of adding LOG in broiler chick rations up to 20 ml LOG/ kg feed with no adverse effect on growth performance.

**Keywords:** Natural bioactive mixture, broiler chickens, performance, economic evaluation.