



Growth performance, serum biochemical parameters and microbial profile of broiler chickens fed on silver nitrate chelated with chitosan

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ABSTRACT

Objectives: This study was designed to evaluate the chelating effect of silver nitrate with chitosan on growth performances of broiler chickens.

Methodology and results: Experimental diets consisted of a negative control diet without any supplement (R_0^-) and three other diets obtained from the negative control ration by adding 0.1% doxycyclin antibiotic considered as positive control (R_0^+), 10mg/kg of unchelated silver nitrate (R_{Ag}) and 10mg/kg of silver nitrate chelated with chitosan (R_{Ag+Cs}). The result revealed that chelating silver nitrate with chitosan induced a significant ($P<0.05$) decrease in feed intake compared to the positive control diet. Both unchelated and chelated silver nitrate had no significant ($P>0.05$) effect on weight gain and feed conversion ratio (FCR). Silver nitrate chelated or not induced a decrease in the relative weight of liver as compared to the negative control diet. Feeding broiler with unchelated or chelated silver nitrate resulted in a significant ($P<0.05$) decrease in the ileal and caecal lactic acid bacteria count. Feeding with unchelated silver nitrate markedly ($P<0.05$) increase the serum albumin and globulin contents with a marked decrease in the albumin/globulin (A/G) ratio indicating a better disease resistance.

Conclusions and application of findings: Unchelated or chelated silver nitrate has no significant effect on growth performances. However, unchelated silver nitrate can be used to stimulate and reinforce the immune system of broiler chickens.

Key words: Broiler chickens, chelation, chitosan, feed additive, gut microbiota, plant charcoal, serological parameters, silver nitrate.