EFFECT OF GARLIC AND CINNAMON ON BROILER PRODUCTION AS ANTIBACTERIAL AND ANTICOCCIDIAL AGENTS

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Extended Summary

The study was conducted to explore the use of datary garlic and cinnamon in broiler diet as antibacteial and anticoccidial agents. Different levels of garlic and cinnamon were used to determine actual combination for proper growth, feed conversion ratio (FCR), also found the actual combination of garlic and cinnamon for antibacterial and anticoccidial agents. Data were analyzed in factorial experiment with RCBD design for ANOVA table. Duncan's Multiple comparison Range Tests were done at 5% level of significant. The experiment carried out with 8 treatments and 3 replicates for each treatment. Total broiler birds for each pen were 10 (Cobb-500). Rearing period was 30 days. Eight treatments were as follows- T1 (1% garlic of total feed intake), T2 (2% garlic of total feed intake), T3 (1% cinnamon of total feed intake), T4 (2% cinnamon of total feed intake), T5 (1% garlic + 1% cinnamon of total feed intake), T6 (2% garlic + 2% cinnamon of total feed intake), T7 (Only antibiotics - as per recommendation of manufacturer), T8 (control - no antibiotics, no garlic & no cinnamon). Present study showed that supplementation of 2% garlic + 2% cinnamon (T6) was significantly higher body weight followed by T5 (1% garlic + 1% cinnamon) ($p<0.05$). T4 (2% cinnamon) occupied 3rd position and T8 (control) occupied last position among 8 treatment groups. Low FCR means best result and high FCR means worst result. In this study, high FCR was found in T8(control) group. Significantly lower FCR was found in T6 group followed by T5 and T4, respectively ($p<0.05$). It means T6 is the best group than T5 and T4, respectively. T8 is the worst. No bacterial and coccidial diseases were found in treatment T1, T2, T3, T4, T5, T6, T7 ($p<0.05$). Only T8 (control) group was suffered by respiratory disease, due to bacterial and bloody faecal due to coccidia. It indicates that garlic and cinnamon can be used as antibacterial and anticoccidial agents. So, no antibiotics are needed to control bacterial and coccidial diseases. Significantly more profit was recorded in T5-1% cinnamon + 1% garlic group (43.88 Tk profit per broiler) followed by T7-antibiotics group (42.80 Tk profit per broiler)and T4-2% cinnamon group

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(40.74 Tk profit per broiler) ($p<0.05$), respectively. Farmers used antibiotics as antibacterial and anticoccidial agents. Residual effect of antibiotics in broiler meat is harmful for human health. Present study concluded that more profitable broiler farming is possible without antibiotics and farmers can run their broiler farms with garlic and cinnamon as antibacterial and anticoccidial agents. T5 (1% garlic + 1% cinnamon) is the best combination for profitable broiler farming.

Table: Effect of garlic and cinnamon on broiler production

Feed types	Average (g) wt./bird	Average(g) feed intake	Average FCR	Average dead bird	Profit/Bird
T1(1% Garlic)	1424.38^{d}	2281.38^{ab}	1.60^{b}	0.33^{b}	27.55^{d} Tk
T2 (2% Garlic)	1437.66^{d}	2272.41^{ab}	1.58^{b}	0.33^{b}	26.84^{d} Tk
T3 (1% Cinnamon)	1520.97^{bc}	2255.17^{b}	1.48^{c}	0.33^{b}	40.28^{c} Tk
T4 (2% Cinnamon)	1537.00^{bc}	2189.52^{b}	1.42^{cd}	0.33^{b}	40.74^{c} Tk
T5(1%Gar+1% Cinn)	1556.00^{ab}	2201.67^{b}	1.41^{d}	0.00^{b}	43.88^{a} Tk
T6(2%Gar+2% Cinn)	1577.67^{a}	2176.67^{b}	1.38^{d}	0.00^{b}	39.3^{c} Tk
T7 (Antibiotics)	1519.14^{c}	2261.931^{b}	1.49^{c}	0.33^{b}	42.8^{ab} Tk
T8 (Control)	1304.5^{e}	2391.346^{a}	1.83^{a}	1.33^{a}	12.3^{e} Tk

Average value in each colunm with different superscripts are significantly different ($p<0.05$)