Phytogenic Alternatives to Antibiotics for Organic Broiler Chicken Production

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Routine use of antibiotic growth promoters in broiler feed poses health hazards to humans and livestock. Earlier studies with herbs supplemented individually have reported inconsistent results. Therefore, the present study is aimed to identify a suitable combination of phytogenics that may improve broiler performance in the absence of in-feed antibiotics. Two feeding trials were conducted in broiler chicken. In Experiment-1, chicks divided into 4 groups were supplemented with Oxytetracycline 0.1g (T1); Zingiber officinale 5g plus Nigella sativa 10g (T2); Piper nigrum 5g plus Cinnamomum cassia 2g (T3); and Curcuma longa 4g plus Trachyspermum ammi 2g (T4) per kg of feed. In Experiment-2, there were five groups: only basal feed (T1); basal feed with Oxytetracycline 0.1g (T2); C.longa 4g (T3); T.ammi 2g (T4); and C.longa 4g plus T.ammi 2g (T5) per kg. Feed consumption of each group was recorded at 24 hour intervals whereas body weight was recorded every 7th day for 5 weeks. In Experiment-1, the mean final body weight of chickens was 1824, 1824, 1788 and 1878 g and Feed Conversion Ratio (FCR) was 1.73, 1.73, 1.74 and 1.55 respectively in T1, T2, T3, and T4 groups. In experiment-2, the mean final body weight was 1783, 1880, 1843, 1869 and 1932 g and the FCR was 1.67, 1.52, 1.55, 1.57 and 1.43 in T1, T2, T3, T4, and T5 groups respectively. Supplementation of C.longa – T.ammi combination resulted in the highest final body weight and best feed conversion ratio in both the experiments. C.longa - T.ammi combination resulted in a mean net benefit of Indian Rupees 9.16 per bird when compared to Oxytetracycline. It is concluded that C.longa- T.ammi combination could be used as a natural feed additive and is a viable alternative to antibiotic growth promoters to produce organic meat.