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Substitution of fishmeal with fish silage in broiler finisher diets

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An experiment was conducted to study the effects of substitution of fishmeal (FM) with fish silage (FS) on growth performance, digestibility and carcass quality of broiler chickens. One-day-old (n=80) broiler chicks were fed with commercial starter ration up to 20 days. On day 20, chicks were randomly allocated into 20 pens (4 chicks/ pen) and fed with an experimental diet from 21-42 days. The dietary treatments were: commercial ration [T1], control ration (no fish silage added) [T2], 25% substitution of FM with FS [T3], 50% substitution of FM with FS [T4]. Commercial ration was in pelleted form while formulated rations were in mash form. FS was mixed with rice bran (RB) (1:2 w/w) and then dried at 60^0C for one hour. Control ration was prepared by using normal RB and diets T3 and T4 were prepared by using dried RBFS mixture. The weight gain and feed conversion ratios were determined at weekly intervals. Birds were slaughtered on day 42. Ileal level dry matter and crude protein digestibility values were determined using Cr_2O_3 as an inert dietary marker. The meat quality was judged by a trained sensory panel.

Birds fed T1; showed significantly higher ($P< 0.05$) body weight, weight gain and carcass weight compared to other treatments on day 42. They consumed significantly higher ($P< 0.05$) amount of feed compared to the birds fed with other three diets. Feed conversion ratios were more or less similar ($P>0.05$) across the four treatments. Both T3 and T4 diets showed significantly ($P<0.05$) higher dry matter and crude protein digestibility compared to the T2. Fat free tibia ash percentage was similar ($P>0.05$) for all the treatments. Sensory evaluation such as meat colour, odour, taste and texture were also not affected by the dietary treatments. The market price of one kilogram of T1 and calculated cost of T2, T3 and T4 diets were 42, 38, 35 and 33 rupees, respectively. Feeding costs per one kilogram of carcass were 109, 98, 104 and 89 for T1, T2, T3 and T4 ration, respectively. It was concluded that substitution of FS up to 50% does not adversely affect the growth performance and meat quality of broilers. Feed cost could be substantially reduced by substituting FM with FS. Further investigations are necessary to popularise the use of fish silage in poultry rations

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