

ABSTRACT

This study was conducted to examine the effect of dietary animal fat and dietary plant oil on broiler chicken performance , some carcass yield and quality, blood serum and tissue cholesterol levels , and to evaluate the economic efficiency of oil and fat-added to broiler chickens rations .

A total of 72 day old, unsexed commercial chicks were used in this experiment. Chicks were allotted randomly to three treatments (24 birds for each treatment) × four replicates (6 chicks for each replicate) and experimentally fed for 7 weeks.

Three types of diets were used: Diet A consisted of no fat and served as a control, Diet B consisted of 1% plant oil (cottonseed oil) and Diet C consisted of 1% animal fat (beef tallow). These diets were formulated to be isonitrogenous (23.2% Crude protein) and isocaloric (3100 kcal/kg metabolizable energy).

Health of the stock, and performance parameters were recorded. On terminal slaughter, blood samples were taken for cholesterol determination. Measures of carcass yield, quality, tissue cholesterol and financial evaluation were monitored.

Animal fat and plant oil- added at 1% to broiler diets, did not affect feed intake, feed efficiency and carcass dressing percentage. Treatment effect in weight gain was significant ($p < 0.05$). Higher weight gains were recorded by the plant oil group.

The addition of animal fat and plant oil had a significant ($p < 0.05$) effect by increasing fat percentages and decreasing protein percentages of broiler meat compared to the control group. Moisture and ash percentages did not differ significantly ($p > 0.05$) in all treatment groups.

However, serum cholesterol was affected significantly ($p < 0.05$) by the addition of animal fat or plant oil. Higher serum cholesterol levels were recorded by the animal fat added group, followed by the plant oil added group, whereas there was no significant ($p > 0.05$) differences between the animal fat and the plant oil groups. Higher tissues cholesterol levels were shown by the animal fat group compared to the other two test groups, i.e there were no significant ($p > 0.05$) differences observed between the control and the plant oil groups.

The plant oil treatment yielded the highest net profit compares to the other two test groups.