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The Effects of Garlic and Tea Supplementation on some Physico-Chemical Characteristics of Hen's Eggs

MARSHALL AREBOJIE AZEKE, KOKOETE EKERETE EKPO

Ambrose Alli University, Dept. of Biochemistry, Nigeria

Abstract

This study was conducted to evaluate the effect of garlic and tea on the performance, egg traits and laying parameters of laying hens. Black leghorn hens, Yafa breed, aged 21 weeks were fed basal diet (commercial feed) supplemented with garlic at 1 and 2% levels and tea at 1 and 2% levels. Feeding was done for 4 weeks after a one week acclimatisation period on test and control feeds. The effects of supplementation on the number and weight of eggs layed, the weight of hens and the weight of egg yolk were determined. Also determined were the total triglycerides, HDL-, LDL-, and total cholesterol content of egg yolk. Feeding of hens for 4 weeks with test and control diets resulted in non-significant changes ($p > 0.05$) in the weights of birds, weight of eggs and egg yolk. 2% garlic supplementation resulted in a non-significant increase in the number of eggs layed. All the garlic supplemented feeds resulted in significant reductions ($p < 0.05$) of total cholesterol, total triglyceride, LDL- and HDL-cholesterol. With exception of the 1% tea supplemented diet, the other tea supplemented diet resulted in significant reductions in the cholesterols tested. 1% tea supplementation had no significant effect on LDL-cholesterol concentration of egg yolk ($p > 0.05$). The combination of garlic and tea resulted in significant reductions of total- LDL- and HDL-cholesterol ($p < 0.05$) but not total triglycerides ($p > 0.05$). The control diets had in most cases non-significant effects on the lipid parameters tested. Anti-cholesterolemic agents found in garlic and in tea flavonoids could be responsible for the for the reduced cholesterol content of egg yolk from test layers. The results show that garlic and tea have great potential when low cholesterol egg is desired.

Keywords: Cholesterol, egg yolk, garlic, layers, tea