The Journal of Poultry Science
Japan Poultry Science Association

ONLINE ISSN : 1349-0486
PRINT ISSN : 1346-7395

The Journal of Poultry Science
Vol. 46 (2009) , No. 2 pp.105-111

[PDF (284K)] [References]

Effects of Dietary Ascorbic Acid on Blood Haematological Profile, Serum Biochemical Components and Tonic Immobility Reaction of Male Turkeys under Summer Condition

Yusuf Konca[1)], Figen Kirkpinar[2)] and Metin Çabuk[3)]

1) Ege University, Odemis Vocational School, Turkey
2) Ege University, Faculty of Agriculture, Department of Animal Science, Turkey
3) Celal Bayar University, Akhisar Vocational School, Manisa-Turkey

(Received: February 23, 2008)
(Accepted for publication: January 5, 2009)

This experiment was performed to determine the effects of dietary ascorbic acid (ASA) supplementation on blood components, leukocyte and tonic immobility of male turkeys under summer conditions. A total of 120 one-day-old male turkeys were fed with three different diets. The experimental diets were: control without ASA (ASA-0), 150mg of ASA/kg (ASA-150) and 300mg of ASA/kg (ASA-300) of diet. The turkeys received the experimental diets for 18 weeks. Diets in mash form and water were provided *ad libitum*. In the ASA-150 and ASA-300 groups, the eosinophile and basophile ratios were higher than those of the ASA-0 group at 12 weeks of age ($P<0.05$ and $P<0.001$), but lymphocyte (L), heterophil (H), monocyte, H: L ratio and tonic immobility were not influenced by the ASA levels ($P>0.05$). Both dietary ASA levels caused a quadratic decrease in serum cholesterol, low density lipoprotein (LDL) and glutamic-oxaloacetic transaminase (SGOT) ($P<0.05$), whereas dietary ASA caused a liner increase in serum iron concentration of turkeys ($P<0.05$). Serum glucose, triglyceride, high density lipoprotein (HDL), total protein, albumin, globulin, lactate dehydrogenase (LDH), glutamic-pyruvate transaminase (SGPT), urea, uric acid and alpha amylase were not affected by the addition of ASA to the diets ($P>0.05$). As a conclusion, blood haematological profile, serum biochemical components and tonic immobility of turkeys were not significantly affected by dietary ASA levels at chronic high summer temperatures in general, and, therefore, there is no need for ASA supplementation in turkeys' diets under summer temperatures that do not exceed 31.7°C.

Keywords: ascorbic acid, summer condition, turkey

To cite this article:

Yusuf Konca, Figen Kirkpinar and Metin Çabuk “Effects of Dietary Ascorbic Acid on Blood Haematological Profile, Serum Biochemical Components and Tonic Immobility Reaction of Male Turkeys under Summer Condition” J. Poult. Sci., Vol. 46: 105-111. (2009) .

doi:10.2141/jpsa.46.105

JOI JST.JSTAGE/jpsa/46.105