

A study the effect of supplementation vitamin C and dietary calcium on: I- Some productive performance in two different strains of broiler chicks under heat stress condition

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Abstract

This study was undertaken to evaluate the effect of adding vitamin C at (0,150 mg/kg feed) and dietary calcium at (0.9,1.1%) on some productive performance of two different strains of broiler (Ross and Hubbard).A total of one hundred ninety two birds(96 chicks for each strain) one day old unsexed were used in this study. Each strain distributed randomly to four groups (24) chicks for each treatment, two replicates of (12)chicks for each.First group was fed on basal diet supplemented with (0.0 vitamin C+0.9% calcium).Second group was fed on the same basal diet supplemented with (0.0 vitamin C +1.1% calcium).Third group was fed on basal diet supplemented with (150 mg vitamin C/kg feed+0.9% calcium) and fourth group was fed on basal diet supplemented with (150mg vitamin C/kg feed +1.1% calcium).The results of this study showed that growth performance of chicks was significantly improved in Co-supplemented vitamin C and calcium (1.1%) and there was no significant interaction between vitamin C supplementation and calcium on dressing percentage and mortality rate.

Introduction

It is well known that high ambient temperature coupled with high humidity has a detrimental effect on the poultry industry by decreasing performance such as (body weight, weight gain, feed intake and feed conversion ratio(FCR).as well as profitability of broiler production, physiologically heat stress causes the release of corticosterone and catecholamines and initiates lipid peroxidation in cell membranes (1, 2). There are numerous methods to alleviate the negative effects of high temperature on performance of poultry; such methods are focused mostly on dietary manipulation. For this purpose vitamin C was used in poultry diets, because of their anti-stress effects and also because of their synthesis was reduced during heat stress (3, 1).In the same way under heat stress condition, birds are not able to synthesize sufficient amount of vitamin C (4).Positive effect of vitamin C supplementation in broiler chickens have been documented previously (5 and 6). (7) noted that during summer months, broiler performance was

decreased and increased in mortality rate. (8) found that ascorbic acid supplementation in broiler diet reduced mortality by 14.6% during heat stress. Calcium play two an important physiological roles in the avian subject, first a provides the structural strength of avian skeleton by formation of calcium salt, second it plays vital role in many biochemical reaction with body via its concentration in the intracellular fluid (9).Vitamin C nutrition should have influence on calcium metabolism in young chicks which posses no ability to synthesize vitamin C (10).(5) stated that metabolism of calcium may also be influenced by dietary vitamin C, and the binding capacity of calcium binding protein is significantly improved with vitamin C supplementation .The present study was carried out to determine the effect of vitamin C and calcium supplementation on some productive performance for broilers under heat stress conditions.

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