EFFECT OF ASCORBIC ACID SUPPLEMENTATION ON THE PRODUCTIVE PERFORMANCE OF FAYOUMI BIRDS MAINTAINED AT DISTRICT KASUR, PAKISTAN (Report)

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ABSTRACT: *The present study is carried out on 640 adult layers of fayoumi breeds raised in District Kasur. These birds were raised in summer season for the period of six month from May 2012 to February 2013. The birds were segregated into four groups A, B, C and D. These four groups were offered with ascorbic acid supplement 0, 50, 100 and 150 mg respectively per kg of feed. The layers ration was offered ad-labium to them with free access to clean and fresh drinking water. The results showed that the egg production was enhanced by feeding the ascorbic acid in the hot summer season. The birds showed better body weight and better FCR (feed/dozen eggs, than the control birds, however, results were found to be significant.*

Keywords: *Ascorbic Acid, Fayoumi, Egg Production, Growth Rate, Kasur*

INTRODUCTION:

Since the establishment of poultry sector in the Pakistan it has showed tremendous growth and it has reached at a level where its impact is being felt on the national economy. Poultry production in Pakistan is the only economical source of animal protein but also provides it to the public within shortest possible time and can therefore play a critical role in tapering breach between supply and requirement of animal proteins. Therefore Poultry production proffers the most excellent forecast for rapid increase in output as compared to other domestic animals. In Pakistan the poultry production is carried out in two different forms e.g. small scale at village level and large scale at environmental control farms with different thousands of the birds at a time [1]. Pakistan being located in the subtropical region the climatic divergence is very vast ranging from very high temperature in summer to very cold weather in winter season. This vast climatic effect the growth rate of the birds especially in the summer season with high humidity grounds great stress on the birds. Despite the installation of the environmental control houses the farmers still unable to exploit the full potential of the bird's egg production due the adverse heat stress in the summer season which result in the great economical loss. Ascorbic acid (AA) supplementation has been account to perk up egg production in birds during the hot weather and under heat stress condition [2] and [3]. However, effect of AA supplementation on fayoumi birds has not been investigated before. Keeping this in observation the current study plan was design to revise the outcome of AA supplementation on productive performance of fayoumi birds.

MATERIALS AND METHODS:

The study was executed at private a farm located in District Kasur from May 2012 to February 2013. A total of 640 adult fayoumi layers were hired in this study which were separated into four equal groups i.e. A, B, C and D. Each group of the bird is further divided in to three equal replicates for close observations. The birds were weighed individually and for the identification purposes the wings were banded. These all birds were reared in 12 separate pens on littered floor under optimal temperature, humidity and managemental conditions. The birds belongs to groups B, C and D were fed with 50, 100 and 150 mg ascorbic acid (AA)/kg of feed respectively along with layer's ration. While the birds belong to group A were fed with the same layer ration without AA supplement. The birds were given free access to feed and water. A sixteen hours day light was provided to the birds. The following data were recorded weekly basis.

1- Average body weight.
2- Average feed intake.
3- Average egg production.
4- Mortality rate.

Feed conversion ratio (FCR) (Feed/dozen eggs) was also calculated. The trial was executed according to completely Randomized design. The data was analyzed by using variance analysis technique [4].

RESULTS AND DISCUSSION

During the experimental period of six months the no of the eggs produced by each group of fayoumi chicks has been showed in the table below.

Table.1 Ascorbic Acid given, egg produced and wt gain comparison of different groups of Fayoumi birds.

Experimental Group	Number of eggs produced	Ascorbic Acid supplement Given	Weight gain
A	3180.33	00 gm	1292.21 gm
B	3240.82	50 gm	1355.00 gm
C	3355.52	100 gm	1402.28 gm
D	3420.82	150 gm	1454.45 gm

The chicks which belong to group D produced the highest number of the eggs. The group D has been provided with the 150 gm of the Ascorbic acid supplement per kg of feed. The 150 gm is the highest amount of the supplement that has been offered to any groups. After the group D the next group C which produced the second highest number of egg has been provided with the 100 mg of Ascorbic Acid supplement per kg of feed. Then come to the group B which also produced more eggs than the control group i.e. group A,

which produced least number of eggs. The results were found to be significant. The body weight of the fayoumi hens also found to respond to the ascorbic acid supplement which is in agreement of previous study [5]. The feed conversion efficiency (feed/dozen eggs) was also found, the average of 2.02, 1.85, 1.75 and 1.71 in groups A, B, C and D respectively. The results were non-significant. The mortality percentage was found to be 3.25, 1.48, 1.56 and 0.45 in groups A, B, C and D respectively. The results showed that administration of Ascorbic Acid supplement responded positively on the hens and it improved egg production of fayoumi birds during hot summer season which is in agreement with the findings of [2] who reported the improvement in egg production of birds supplemented with Ascorbic Acid (AA) under heat stress. The mechanism of action of Ascorbic Acid on the production of egg is not fully understood, however, it is found that it may play a key role through action of AA on thyroid [6]. On the bases of present study it may be affirmed that dietary AA supplementation may be supportive in neutralizing the heat stress and may enhance egg production in fayoumi birds.

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