STUDY THE EFFECT OF CROSS AND RECIPROCAL CROSS ON PRODUCTIVE PERFORMANCE AND IMMUNE RESPONSE FOR CHICKEN

By

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B.Sc. Agric. Sc. (Poultry Production), Ain Shams Univ. (2014)

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ABSTRACT

Mohamed Abdelkawy Abdelmahfoz Eltohamy: Study the Effect of Cross and Reciprocal Cross on Productive Performance and Immune Response for Chicken. Unpublished Ms.c. Thesis, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, 2018.

Effect of cross and reciprocal cross between the Fayoumi and Sinai breed on productive performance traits and immune response measurements under prevailing conditions in Egypt.

The objective of the present study was the Effect of Cross and Reciprocal Cross on Productive Performance and Immune Response for Chicken., The experiment was carried out in the farm of the Faculty of Agriculture - Ain Shams University, At the beginning of the experiment (22 week of age) , sixty chickens(30 Fayoumi breed, 30 Sinai breed) It has been divided into all into males and females12 males and 48 females, and each male with four females, so that the education is appropriate. They were housed in batteries and were then transferred to individual batteries until the end of the experiment (36 weeks of age). It was necessary to compare the two breeds used in the experiment in terms of egg production. The eggs were recorded for 90 days , the Sinai breed is superior and superior in egg production compared to Fayoumi with significant differences with them .and We have been collecting a number of eggs and we have done a good quality egg experiment and we found that the best breed in the weight of eggs, High yolks, Albumin and egg breaking, while Fayoumi was Best in Rising Albumin and Yolk index with a significant difference .and At the age of 27 weeks for the parents of the Sinai and Fayoumi chickens, the body measurements of males and females were recorded ,and We conclude that Sinai is the highest in body weight, Shank length and Tibia length and Keel length and Body depth, while Fayoumi is the highest in Comb length and Wattle length and all differences between them were significant differences With an interaction between the effect of the breed and the effect of sex

.The two breeds were mated and four crosses were produced Male Fayoumi*Female Fayoumi(FF) , Male Fayoumi*Female Sinai (FS) ,Male

Sinai*Female Sinai(SS) , Male Sinai*Female Fayoumi(SF) After the second generation hatching, (FF) was the highest in Fertility percent and (SF) was the highest in Hatchability percent of total eggs and Hatchability percent of fertile eggs . and Individual body weight (in grams) was recorded for each sex separately within each breed at 0,1,.. 8 weeks of age. Male Sinai*Female Fayoumi (SF) was found to be the best crosses in terms of weight and vitality and better in food conversion. The most important results obtained that It could be observed that the effect was(SF)cross is the best in fertility , hatchability percent of total eggs , of fertile eggs , body weight and body weight gain .we took the Blood samples were withdrawn from the flock of children and the flock of parents of both sexes male and female. Some of the elements in the blood were measured and analyzed statistically, we conclude that the breed Fayoumi generation parents were the highest in the percentage of Total lipids and Cholesterol and lead significant clear While the hybrid FS cross excelled the generation of sons in Albumin and Phosphorus and Total protein and Calcium and we injected Phytohemagglutinin-P (PHA-P) for the parent stock at 50 wks. And found that the superiority of the Fayoumi breed on the Sinai breed in the immune response to injection of Phytohemagglutinin-P PHA-P, and this is consistent with results obtained from the estimated Globulin ratio, which showed that the Fayoumi breed more immune response of the Sinai breed.

And the offspring stock at 8 wks. we found that the SF cross response for the injected substance was highest among all groups and in 24 and 48 hours after injected the different was non-significant between them, and this is consistent with results obtained from the estimated Globulin ratio.

In conclusion, SF It is the best cross among all genotypes in Productive Performance and Immune Response.

Then, we can utilize the SF Male Sinai*Female Fayoumi (SF) as a dependent line in development programs under prevailing environmental conditions of Egypt.

Key words: Reciprocal cross, Productive, immune, Fayoumi, Sinai, SF, SS, FS, FF

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INTRODUCTION

Crossing improvement in plants and animals has become one of the most important factors that help to meet the needs of people with the increase in the population of the world and fill the gap of food needs of humans and animals is aimed at increasing productivity wherever the type of production and this study is one of the studies that discuss and help in crossing improvement.

Many scholars have evaluated the egg production potentials of crossbreds between local and exotic chicken genotypes with variable results under controlled environments **(Bekele *et al*., 2010)**

Poultry eggs institute one of the most valuable sources of animal protein recommended for human consumption, and offer means of solving the problems of animal protein shortage especially in the rural areas in many African countries **(Olawoyin, 2006)**

Poultry production sector has an effective contribution in the value of livestock production in Egypt. It is worth about 22.5 billion pounds, represented in poultry meat and eggs: the value of poultry meat is about 16.5 billion pounds, and the value of the eggs is about 6 billion pounds **(Wahed 2014).**

This study discusses Election by mixing and mating in poultry, between the foreign breeds and standard breeds, but mating between local breeds and standard breeds, but in this study mating between the local breeds with some has been chosen Sinai, With its abundant production of eggs, meat and good weights and has the largest size of eggs Compared to the local breeds and was chosen to mate Fayoumi, which is characterized by its production of heavy eggs and high quality and strong shell eggs and were mixed and the confusion of the reverse and the production of hybrid

members within the framework of education attributed to the increase in productivity of local breeds in the production of eggs and meat and increase immunity or preservation without the need for breeds Foreign.

We will measure the efficiency of eggs, body measurements and immune response in the generation of parents and the generation of chicks and weights of the weekly generation of chicks and blood standards so that we can compare between the groups to know what is the best genetic makeup and increase research on the best group and development and increase breeding.