STUDY THE EFFECT OF AGE AND SEX ON SOMEHAEMATOLOGICAL PARAMETERS IN GOLDEN LOCAL QUAIL

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ABSTRACT

Effect of age and sex were measured during and before sexual maturation of golden local quail males and females. Maels erythrocytes count showed higher value compared with that of adult females . Haemoglobin and haematocrit of adult males were significantly higher than those of adult females. However total leukocyte count and H/L ratio of the adult female were higher than those of males. Body weight of both sexes increased with age. As well as many of the haematological parameters differed significantly ($P<0.05$) in accordance to the age and sex .

INTRODUCTION

The quail birds are mainly bred for their eggs and meat in various parts of the world including Iraq (1 and 2). It possesses several advantages such as rapid growth ,early sexual maturity and easy handle (3). Haematological profiles is an important index of physiological state of the individual (4). However, blood is probably the most versatile and complex fluid in existence. Therefore, most researcher have studied the avian blood and found a great degree of variation in RBC and considered it to be normal (5)

Body data can be useful aids to diagnose of diseases in birds, moreover and managing abnormalities due to diseases change blood parameters(6 &7). Haematological parameters can act as indicators for the state of birds health (8&9).

This study was conducted to evaluate the effect of age and sex on the haematological parameters in golden local quail.

MATERIALS AND METHODS

Field work was conducted in the quail house of agriculture college.

A total of 15 adult males and 15 females and 20 juvenile males and females. Quail golden plumage were utilized for this study. The birds were housed in cages under controlled environmental conditions and provided with food and fresh clean water was offered *ad libitum* .

Blood samples were obtained from 5 birds from each group. About 3 milliliters of blood was drawn from the wing vein using a syringe containing anticoagulant. Determination of blood parameters were carried out according to procedures described by(10).

Total Red Blood Cells (RBC) counts were performed by a manual method using haemocytometer. Blood slides for the differential leucocyte counts were stained according to (11). Hetrophil to lymphocyte ratio was obtained by them. Haemoglobin concentration was estimated using Sahli Apparatus. Haematocrit or packed cell volume was estimated using capillary tubes, a haematocrit centrifuge and a Haematocrit reader . As well as the birds were weighted weekly. Data were statistical analyzed using SPSS (1998). Furthermore ,the fed data were analyzed to regression using the same computer program to explain the relationship between body weight and age .

RESULTS AND DISCUSSION

The Haematological values of golden feather quail established by this study are outlined in table (1). The data distinctly indicated significantly ($P<0.05$) a higher erythrocytes count in adult males (4.85 ± 0.34), compared with that of adult females (3.50 ± 0.09). Haemoglobin and Haematocrit of adult males are (15.95 ± 0.35 and 43.45 ± 0.55) significantly ($P<0.05$) excelled in adult females (13.0 ± 0.50 and 40.85 ± 0.75). The explanation is related with sex in general , the total RBC count ,Hb and PCV assented with age and are higher in male than females golden feather quail . Result of many studies provide considerable empirical evidence in support of this present results (12& 3). These results are in conformity with similar findings in

other avian species like ducks , geese (13& 14),pheasant (6), chickens (15) and turkey (16 & 17).

Table 1- Age and sex variation in Haematological values for adult quail golden feather (50day old) and juvenile golden feather (5 week old)

Parameters	Adult males	Adult females	Juvenik males	Juvenik females
RBC/mm² Erythrocytes	$4.85_{\pm}0.34^{a}$	3.50 ± 0.09^{a}	$2.85_{\pm}0.45^{b}$	$2.35_{\pm}0.25^{a}$
Haemoglbin	15.95 ± 0.35^{a}	13.0 ± 0.50^{b}	11.45 ± 0.22^{c}	14.45 ± 0.25^{d}
Pcv % Haematocrit	43.45 ± 0.55^{a}	40.85 ± 0.75^{b}	$37.8_{\pm}0.25^{c}$	$36.50_{\pm}0.34^{c}$
WBC /mm³ Leukocytes	$25.15_{\pm}0.35^{a}$	$29.25_{\pm}0.77^{b}$	$18.450_{\pm}0.33^{a}$	$20.500_{\pm}0.33^{c}$
Eosinophils	$1.185_{\pm}0.44^{b}$	$1.300_{\pm}0.45^{a}$	$0.355_{\pm}0.31^{c}$	$0.315_{\pm}0.41^{c}$
Basophils	$2.570_{\pm}0.55^{b}$	$4.301_{\pm}0.35^{a}$	$1.560_{\pm}0.34^{b}$	$2.115_{\pm}0.44^{b}$
Monocytes	$2.058_{\pm}0.35^{a}$	$1.285_{\pm}0.44^{b}$	$0.780_{\pm}0.41^{c}$	$0.795_{\pm}0.35^{c}$
Hetrophil / Lymphocytes	$1.23_{\pm}0.53^{b}$	1.75 ± 0.45^{a}	0.84 ± 0.19^{c}	0.67 ± 0.21^{c}

Table 2 : Male body weight of different ages.

Age	10day	16day	24day	35day	45day	50 day
Body Weight (gm)	$14.00_{\pm}$ 0.35	$48.96_{\pm}$ 0.43	$95.66_{\pm}$ 0.44	$110.55_{\pm}$ 0.22	$120.66_{\pm}$ 0.75	$172.97_{\pm}$ 0.81

The mean leukocyte count of adult female was significantly ($P<0.05$) higher than that of adult male . The results indicated that adult female had higher lymphocytes count than others . these results are in agreement with other avian species (18 &19).

The present data showed that adult female golden feather quail had higher basophils counts than adult male. The findings of (15) are in a complete agreement to our results , as well as the present results are provide convert support by (20). The higher basophile counts might be associated with physiological stress probably due to the laying cycle of the adult hens (21).

The Heterophil and lymphocyte ratio in quail golden feather adult females did differ significantly ($P<0.05$) between adult and young birds . It was higher in the adult female. This high value may reflect physiological stress due to the laying circle of the layer.This finding confirm previous results obtaind by (22).

Body weight of male golden quail from age of 10 days to 50 days is presented in table (2). The result distinctly showed that the body weight increase with age . The spread in body weights appeared larger as the birds reached sexual maturity . Body weight and age of the golden quail were significantly correlated ($r=0.923$)

Our results are supported by the finding of (3) who documented an increase in the body weight with increasing age.

The results found that many of the Haematological parameters differed significantly in accordance to the age and sex , as well as, accordingly the weight of the bird should be given due consideration when planning on experiment using quail . our results are supported by those published by (22).

دراسة تأثير العمر والجنس على بعض المعايير الدموية في السمان المحلي الذهبي

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الخلاصة

قيست تأثيرات العمر والجنس للذكور والاناث خلال وقبل النضج الجنسي للسمان المحلي الذهبي. ففي الذكور تبين ان مقدار خلايا الدم الحمر اكثر عدداً بالمقارنة مع الاناث البالغة. علاوة على ذلك تفوقت قيمة قراءات الهيموغلوبين والصفيحات الدموية في الذكور البالغة معنوياً عن قيمها في الاناث البالغة.

كان اجمالي عدد خلايا الدم البيض ونسبة H/L في الاناث البالغة اعلى من الذكور ووجد بأن وزن الجسم يزداد مع العمر واختلاف القياسات الدموية معنوياً تبعاً للعمر والجنس.

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