

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/321005038>

Effect Of In Ovo Injection Of Testosterone And Estrogen Hormones And Vitamin C On Some Reproductive, Physiological, Behavioral...

Thesis · November 2017

CITATIONS

0

READS

8

1 author:



Khalid Al-Salhie

University of Basrah

36 PUBLICATIONS 1 CITATION

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



testosterone and estrogen hormones [View project](#)



Are there hormones in the yolk of egg [View project](#)

**Effect Of *In Ovo* Injection Of Testosterone
And Estrogen Hormones And Vitamin C On
Some Reproductive, Physiological,
Behavioral And Productive Traits
Of Japanese Quail (*Coturnix japonica*)**

A Dissertation

**Submitted to the council of the College of Agriculture at the
University of Basrah in partial fulfillment of
therequirementsfor the degree of doctor of
philosophy in Animal Resources
(Avian Physiology)**

By

Khalid Ch. K. Al-salhie

Master of Animal Resources 2005

Summary

This study was conducted which included two experiments in 19/3/2010 to 19/8/2010 . At station of agricultural researches and experiments / College of Agriculture/ University of Basrah . To evaluate the effect of in ovo injection of testosterone and estrogen hormones and vitamin C on some Reproductive , Physiological ,Behavioral and productive traits of Japanese quail (*Coturnix japonica*) birds . A total of 770 Eggs of Japanese quail , divided into equal 7 treatments (110 eggs per treatment) were used in first study .The eggs of this study were injected before first day of hatchery . The eggs of treatments were injected in blunt end at compound as follows :

First treatment: were injected testosterone propionate(25 ng)with vitamin C (1%)

Second treatment : were injected testosterone propionate(25 ng) only .

Third treatment : were injected Estradiol benzoate(25 ng) with vitamin C(1%) .

Four treatment : were injected Estradiol benzoate(25 ng) only .

Five treatment : were injected vitamin C(1%) only .

Six treatment : were injected corn oil (sham) .

Seven treatment : without injection (control) .

The injection dose were 50 ul for all egg.

Hatching chicks were reared on litter for two weeks and then transported to the cages , The birds were randomly distributed into seven treatments with three replicates for study this traits (Reproductive, Physiological, Behavioral , immunity and productive) .

Results indicated that :

- 1– No significant ($p < 0.05$) in hatchability between groups.
- 2–A significant ($p < 0.05$) increase in weight of birds of treatments 1,2,3,4 and 5 at hatching compared with control groups and a significant increased of weight of its dead embryos at all embryo mortality stages.
- 3– For early at the age of puberty for treatments male 1 and 2 and treatments females 3 and 4 . In addition to a significant decrease in the rates of males weights of treatments 3 and 4 at the age of puberty . And significant increase in weight of treatment females 1, 2, 3, 4 and 5 at the age of puberty compared with two sets control. In addition to emergence of behavioral jump in treatments males 1 and 2 early compared with other treatments.
- 4–There was significant increase of yolk cholesterol and rates of egg weight produced from females of treatments 3 and 4 in all ages of the study. In addition a significant increase in the relative weight of their ovaries at ages 30 and 45 days compared to relative weight of the ovaries of treatments 1 and 2 which decreased significantly of these two ages.
- 5–There was significant increase in the rates of relative weights of testes for males of treatments 1 and 2 in all ages of study .In addition to significant decrease in the rates of relative weights of testes for males of treatments 3 and 4 at same ages .Moreover, a significant increase in the rates of sperm tubule diameters and thickness of germ cells of testes semeniferous of treatments 1 and 2 at ages 30 and 45 days compared with treatment 3 and 4 which significantly decreased at these two ages.
- 6–There was significant increase in birds weight of treatments 1, 2, 3, 4 and 5 in all ages of the study compared with two sets of control .In addition superiority of females to males in the weight .Beside the result show a

significant interaction between treatment by sex hormones and sex at ages 60 days. and weight gains were not affected significantly depending on the treatment , but superiority of females to males in the amount of weight gains for the period (30–45 days).

7–There was a significant increase in relative weights of spleen and bursa gland in birds of treatments 1, 2, 3 and 4 at all ages of the study. And there was no significant interaction between treatment by sex hormones and sex on relative bursa gland and spleen .

8–There was a significant increase in testosterone concentration in the blood of birds of treatments 1 and 2 compared with treatments birds 3 and 4 which decreased significantly . In addition superiority of males to females for all ages of the study . and to the impact of interaction between treatment in sex hormones and sex significant at all ages of the study.

9–There was a significant increase in estrogen concentration in the blood of birds of treatments 3 and 4 compared with birds of treatments 1 and 2 which decreased significantly . In addition superiority of females to males for all ages of the study . and to the impact of interaction between treatment in sex hormones and sex significant at age 60 days of the study.

10–There was significant increase in level of total protein in blood of birds of treatments 1, 2, 3 and 4 in all ages of the study as well as to the superiority of females to males as well as the impact of interaction between treatment in sex hormones and sex significant at ages 45 and 60 days . And there was no significant affect on blood cholesterol due to the impact of treatment but, superiority of females to males at all ages of the study . And there was no

significant interaction between treatment in sex hormones and sex on cholesterol level.

11–There was a significant increase in (calcium and Phosphorus) of tibia bones for birds of treatments 1, 2, 3 and 4 for all ages of the study. In addition superiority birds of fifth treatment on birds of two sets controls. and superiority of females to males at ages 45 and 60 days from the study. And to the impact of interaction between treatment in sex hormones and sex there was no significant at all ages of the study in calcium concentration however there is a significant affected in Phosphorus concentration at ages 45 and 60 days.

The second experiment involved choosing number of birds at 33 days of ages. Selecting fifteen birds for each mating (ten females and five males) in each mating in cages . The area of the one cage (71×71×50 cm) , collect 60 eggs from each mating and given each mating code as follows:

- 1– First mating (A) : males from testosterone and vit. C ovo inject with females from testosterone and vit. C ovo inject.
- 2– Second mating (B) : males from testosterone and vit. C ovo inject with females from estradiol and vit .C ovo inject.
- 3– Third mating (C) : males from estradiol and vit .C ovo inject with females from testosterone and vit. C ovo inject.
- 4– Fourth mating (D) : males from estradiol and vit .C ovo inject with females from estradiol and vit .C ovo inject.

The following are the most important results of this experiment:

- 1– There was significant increase in mating behavior in mating (B) with a calculation increase in the ratios of fertility and hatching for mating (A ,B).

- 2– No significant affect in age and weight of sexual puberty in hatching birds from these mating . In addition to no significant affect in egg weight , yolk cholesterol and tissue characteristics of male testes.
- 3– No significant affect in birds weights from these mating depending on the mating but, superiority of females to males in all ages of the study . In addition to non significant affected in relative weights of testes, ovaries, spleen and bursa gland.
- 4– No significant affect in testosterone and estrogen concentration depending on mating but, superiority of males to females in testosterone concentration and females to males in estrogen concentration.
- 5– No significant affect in total protein and cholesterol of blood depending on mating but, superiority of females to males in blood total protein and cholesterol .