

تأثير الإستجابة للمناعة للمستضد SRBC والجنس على تركيز الجلوبيولينات  
المناعية

ووزن الغدد الليمفاوية في الدجاج

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**EFFECT OF IMMUNE RESPONSE TO SRBC ANTIGEN AND  
SEX ON IMMUNOGLOBULINS CONCENTRATIN AND LYMPHOID  
ORGANS WEIGHT IN CHICKENS**

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(Received: Oct. 7 , 2012)

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**ABSTRACT:** A total number of 320 birds of Norfa strain from both males and females were used in the present experiment. At 20-wk of age, the primary antibody (Ab) titers for sheep red blood cells (SRBC) were determined for each individual at 7-d post-immunization. Birds were divided into three, high, low and control, antibody titers groups with 20 males and 20 females of each group, in order to study the effect of Ab-titers and sex on immunoglobulins (IgG, IgM and IgA) concentration and lymphoid organs weight in Norfa chickens. The main results obtained can be summarized as follows:

- 1- The high immune response chickens had significantly the highest level (27.16) and the low immune response chickens had the lowest level (2.46) of primary Ab-titers, while the control chickens occupied intermediate level (7.44).
- 2- The immune response to SRBC had positive association with WBC counts, leukocyte (%), monocytes (%) and immunoglobulins (IgG, IgM and IgA) concentrations.
- 3- Males had significantly higher WBC counts and immunoglobulins (IgG, IgM and IgA) concentrations than females.
- 4- The IgM had the lowest concentration, where IgG concentration was predominated in absolute amount over other serum immunoglobulins in chickens.
- 5- High immune response chickens had heavier primary lymphoid organs weight than low immune response chickens. The weight values were 1.14 vs 0.28 g for bursa of Fabricius and 4.44 vs 3.36 g for thymus, respectively.
- 6- Control chickens had heavier spleen weight (1.64 g), than high (1.54 g) and low (1.06) immune response chickens, which explained unassociation of spleen weight with the immune response.
- 7- The present results concluded that high immune response chickens produced higher immunoglobulins (IgG, IgM, IgA) concentration. Also, heavy primary lymphoid organs weight produced higher level of antibody titers.

**Key words:** Chickens: immune response, immunoglobulins, primary lymphoid organs.

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تأثير بعض العوامل البيئية على بعض صفات الدم في سلالتين محليتين من الدجاج

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## EFFECT OF SOME ENVIRONMENTAL FACTORS ON SOME CHEMICAL BLOOD TRAITS IN TWO LOCAL STRAINS OF CHICKENS

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(Received: June 19, 2012)

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**ABSTRACT:** *The present study was carried out at the Poultry Research Farm, Department of Poultry Production, Faculty of Agriculture Minufiya University at Shibin El-Kom, This experiment was designed to study the effect of different light colors (Incandescent, Fluorescent and Infrared light) and vitamin E supplementation on some blood characteristics. The first group was exposed to incandescent light (control), the second was exposed to fluorescent light, and the third one was exposed to infrared light. All birds under light treatments were exposed to lighting period for 14 hours / day. Each group was divided into two subgroups, the first: vitamin E 1ml (20.000IU) added to one liter of their drinking water for 5 day/wk, whereas the second one consumes drink water without vitamin E. The numbers of treatments were 12 (6 treatments for each strain).*

*The obtained results were summarized as follows:-*

*Results indicated that fluorescent light without vitamin E recorded the best blood characters of males meanwhile, in female birds provided under infrared light with vitamin E had the highest of most blood traits in Sinai strain. However, without vitamin E supplementation, males under infrared light were better blood characters in Norfa strain. While, birds recorded fluorescent light with vitamin E the best in female.*

*There were no significant difference among light colors blood cells, GPT, GOT and platelets. While, the difference between light colors on white blood cells was highly significant ( $P < 0.01$ ). The interaction between (color  $\times$  strain), (treatment  $\times$  strain), (color  $\times$  treatment  $\times$  sex  $\times$  strain) and (color  $\times$  treatment  $\times$  strain) in hemoglobin (Hb), red blood cells (RBCs), hematocrit value (HCT), white blood cells (WBCs) and platelets value (PLT) were not significant. While, All interaction effects such as (treatment  $\times$  sex  $\times$  strain), (sex  $\times$  strain) and (color  $\times$  sex) in Hb were highly significant ( $P < 0.01$ ).*

*The correlation coefficient between blood characteristics under the effect of light color , vitamin E, strain and sex were mostly positive and no significant or high significant. But, only few traits had negative correlation coefficient between each other.*

**Key words:** *light colors, vitamin E, blood traits, local stains, chickens*

***EFFECT OF FEEDING FREQUENCY AND STOCKING DENSITY ON THE PERFORMANCE OF MONO SEX NILE TILAPIA IN CONCRETE TANKS***

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***ABSTRACT:***

A 22-weeks factorial design 2 x 3 x 2 (two feeding frequencies, three stocking densities and two replicates) rearing trial was conducted in concrete tanks with average initial weight of 2.8  $\bar{x}$   $\pm$  1.3 g/fish and average initial length of 5.2  $\bar{x}$   $\pm$  0.9 cm/fish of mono-sex male Nile tilapia, *Oreochromis niloticus*, to examine the effects of two feeding frequencies (2 and 4 times daily) and three stocking densities on growth performances, production traits, feed utilization and body composition. Twelve concrete tanks 4 m<sup>3</sup> each (2 x 2 x 1.25 m, long, width, and height) were stocked with either 200, 400 or 600 fish for each tank to give a stocking rate of 50, 100 and 150 fish /m<sup>3</sup>, respectively and maintained at a flow rate of 8 L/min. The results revealed that, mean final weight (g/fish), mean final length (cm/fish), gain in weight (g/fish), gain in weight %, gain in length %, daily gain (g/fish), SGR (% per day) were significantly ( $P \leq 0.01$ ) the best at the lowest stocking density. While, total production and net production exhibited significantly ( $P \leq 0.01$ ) the opposite trend. Harvests and production estimates increased with increasing stocking density. No significant differences ( $P \geq 0.05$ ) were found between feeding frequency in terms of gain in weight, mean final length, gain in weight (%), gain in length (%), average daily gain (g/fish), SGR (%/day), feed conversion ratio (FCR), feed efficiency ratio (FER), protein efficiency ratio (PER) and total feed intake (g/fish). While mean final weight (g/fish) and all production traits were significantly influenced by feeding frequency. The highest stocking density (150 fish/m<sup>3</sup>) had significantly the best FCR, FER, PER and feed intake (g/fish). Whole body moisture, ash and crude fiber contents were not significantly affected by either stocking density or feeding frequency. Whole-body protein content was significantly affected by stocking density, but not significantly affected by feeding frequency. While whole body crude fat content was significantly affected by feeding frequency, but not significantly affected by stocking density it can be concluded that, stocking density of 150 fish /m<sup>3</sup> of mono-sex male Nile tilapia reared in concrete tanks at feeding frequency of four times/day exhibited the highest production and net profit and would seem to be the most desirable density under this system conditions.

***Key words:*** Feeding frequency, stocking density, body composition, mono sex male Nile tilapia

