

**EFFECT OF WATER QUALITY ON PRODUCTIVE AND
IMMUNOLOGICAL PERFORMANCE OF LOCAL HENS
IN EGYPT AND SUDAN**

BY

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THESIS

**Submitted in Partial Fulfillment of
the Requirements for the Degree of**

**DOCTOR OF PHILOSOPHY THESIS IN AFRICAN
STUDIES**

In

**Natural Resource
(Animal resources)**

**Department of Natural Resources
Animal Resources
Animal and carnivore care
Faculty of African High Studies
Cairo University
EGYPT**

2020

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Terminology

(OH-)	Hydroxyl
(WTC)	Water Treatment Control
(MTW)	Magnetically Treated Water
(WC)	Water Consumption
(WFCR)	Water and Feed Consumption Ratio
(GP)	Garlic Powder
(EW g)	Egg Weight g
(EP)	Egg Production
(BW)	Body Weight
(FI)	Feed Intake
(FC)	Feed Consumption
(A.W)	Albumen Weight
(E.S.W)	Egg shell Weight
(Y.W)	Yolk Weight
(EL)	Egg Length
(E.ST)	Egg Shell Thickness
(AI)	Albumen Index
(YI)	Yolk Index
(YD)	Yolk Diameter
(Sh I)	Shape Index
(HU)	Hough Units
(E.YC)	Egg Yolk Color
(AD)	Albumen Diameter
(KCL)	Potassium Chloride
(SW)	Saline Water
(EN)	Egg Number
(EM)	Egg Mas
(FC)	Feed Consumption
(RBC 's)	Red Blood Cell Count
(Hgb)	Hemoglobin
(MR)	Mortality Rate Percentages
(DBWG)	Deed body Weight Gain
(TBWG)	Total body Weight Gain
(nd)	Not Detected

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Degree: Doctorate

Thesis title: The effect of water on the productive and immune performance of domestic laying hens in Egypt and Sudan

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Department: Natural Resources **Branch:** Animal Resources **Degree Awarded: /**

Abstract:

This experiment was conducted to study the water provided to chickens on the yield of productive performance, the rate of feed consumption and the feed conversion factor. While assessing the effect on the immune response of birds, studying the effect of adding chlorine and iodine and using a magnetic separator for minerals in treating water pollution and the effect on production efficiency.

For this purpose, 320 chickens of the Egyptian Fayoumi strain were divided at the age of 24 weeks during a trial period from 24 weeks to 48 weeks. The birds were divided into eight groups, each group of 40 hens.

The transactions were:

- 1- Water without additives
- 2- Water with the addition of chlorine 1 cm / liter
- 3- Water with the addition of iodine (name / liter)
- 4- Water with the addition of chlorine 1 cm / liter and iodine (name / liter)
- 5- Water with the use of a magnetic separation device for minerals
- 6- Water with the use of a magnetic separator for minerals with the addition of chlorine 1 cm / liter
- 7- Water with the use of a magnetic separation device for minerals with the addition of iodine (name / liter)
- 8- Water with the use of a magnetic separator for minerals with the addition of chlorine 1 cm / liter and the addition of iodine (name / liter)

For a period of six months, it was divided into three periods each two months (8 weeks).

The results obtained showed the following:

- 1) The treatment of water with chlorine 1 cm / liter and iodine 1 cm / liter with the use of magnetic separator for metals throughout the period of the experiment had an effect on food intake (FI) compared to the control group. A group of chickens (Treatment 8) consumed less feed ($P < 0.05$) than the control group (comparison) and it was better in feed conversion factor.
- 2) Supplying chickens with drinking water (Group 8) improved egg production (EP% significantly ($P \leq 0.05$) throughout the entire trial period (24-48 weeks) compared to the control group, there was no difference in egg weight (EWg) except (Group 5,8) that was significantly higher ($P \leq 0.05$) than the others.
- 3) During the use of drinking water treatments, the different experimental periods, especially in groups (5 and 8), showed a lower mortality rate compared to the control

group.

4) There is an improvement in most egg quality characteristics (egg weight (AW), yolk weight YW)) egg shell weight SW)), (EL), (ST), (AD), (YD), (YH) when using water Drink with 1% chlorine and 1% iodine while using a magnetic mineral separation device throughout the experiment.

5) The groups of drinking water treatments 1% chlorine and 1% iodine with the use of magnetic mineral separation device recorded a significant decrease ($P \leq 0.05$) of the water content values of microbiological analysis cells (E. coli) compared with the control group.

6) The immunity of chickens that drink water containing chlorine (name / liter) iodine (name / liter) with magnetic water improved significantly ($P \leq 0.05$) by examining the immunity titers of birds (H9N1-H5N1) and Newcastle (ND) compared to the control group. While the differences between experimental drinking water and control in immunoglobulin standard (IGg - IGm and IGa) were significantly higher ($P \leq 0.05$) except for (Group 2) in (IGg) between different experiments of treatments.

7) The highest economic efficiency was recorded for water treatments using 1% chlorine and 1% iodine with magnetic separator

recommendation:

It can be recommended to add chlorine (name / liter) and add iodine (name / liter) with the use of magnetic separator device for treating drinking water for chicken (group 8) to obtain the best production performance, immunity and economic efficiency.