

**STUDY THE EFFECT OF GROUNDWATER
ON PRODUCTIVE AND IMMUNOLOGICAL
PERFORMANCE FOR BROILER CHICKEN**

By

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B.Sc. Agric. Sc. (Poul. Prod.), Fac. Agric., Ain Shams University, 1999
Diploma in Env. Agric. Sc., Dept. of Agric. Sc., Inst. of Env. Studies and
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**A Thesis Submitted in Partial Fulfillment
Of
The Requirements for the Degree of**

**MASTER OF SCIENCE
in
Agricultural Sciences
(Poultry Breeding)**

**Department of Poultry Production
Faculty of Agriculture
Ain Shams University**

2020

Approval Sheet

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ABSTRACT

Shimaa Mohamed Shaker Ibrahim: Study the Effect of Groundwater on the Productive and Immunological Performance for Broiler Chicken. Unpublished Thesis, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, 2020.

The basic aim was an attempt to evaluate the effects of groundwater source on some productive performance traits of broiler chickens. 120 chick Hubbard were used in the trial with four different sources of groundwater belonging to the Qalyubia governorate {Ahmed Saeed (A. Saeed), Shalakan, El-Wqaf, and Bahadah regions}. We have kept a distance of not less than 10 km between sources.

Chick's 3-day-old of broiler were used in this experiment and divided into four groups according to the studied regions, the trial lasted until the age of 4 weeks, and the chemical analysis of the drinking water during the trial was conducted. Carcass dissection and giblets extraction were also undertaken. The weight of birds was taken each week when receiving at the farm and growth rate was determined on a weekly basis. The main results obtained could be summarized as follow:

- the Bahadah group recorded the heaviest bodyweight (1920gm) compared to the other groups, while there were no significant differences between the regions of A. Saeed and El-Wqaf, where they were recorded (1770 and 1690 gm, respectively) at 4 weeks of age.
- There were no significant differences between groups that consumed water in the four different regions of the experiment with regard to food consumed and the food conversion factor.
- It was noticed that there were significant differences between the four areas that used groundwater in relation to the weight of the carcass, The Bahadah region was successful in the weight of the carcass, with a noticeable difference. The weight of the carcass was

recorded (1457.7 g), (71.7%) from percent of body weight compared to the other regions (Shalakan, A. Saeed, El-Wqaf) following was recorded (1332.4, 1271.8, 1265.3 g) with a percentage of (71.5, 70.9, 70.8%).

- The significant differences were realized among areas. However, the Bahadah group recorded the highest figure of body weight trait, while the El-Wqaf group recorded the lowest figure, both Shalakan and A.Saeed groups recorded the intermediate values.
- The percentage of total dissolved salts in the water of Bahadah region was lower than the rest of the other regions, and it was recorded (391 g / L), which resulted in a decrease in the number of bacteria in the water in the areas.
- It was noticed that there was no high pollution for the lead and cadmium elements for the water used in the experiment, but that the highest record was recorded in Ahmed Saeed area followed by El-Wqaf area, which resulted in the absence of pollution in the carcass using the groundwater of the four areas.
- That the CMI (Cell-mediated immunity) response was found significantly higher, showed that the group of pro-biotic (50mg) at 24 h post-PHA-P (Phytohaemagglutinin-P) injection as compared to other groups. However, there was no significant difference among groups at 48h. But showed at 72h post-PHA-P injection.
- There is a significant difference between the four places in relation to the immune performance of the chicken.
- It was noted that the chicken outperformed the El-Wqaf region and the immune cells retained compared to the rest of the regions.
- It was also noticed that the A. Saeed area was the least important while maintaining the two areas with Shalakan and Bahadah cellular immunity.

Finally, it is important to note that providing flocks with a clean and wholesome water supply can make a difference in performance traits.

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