



The Effect of Water Magnetization of Different Locations in Basrah Province on the Productive and Physiological Performance of Local Ducks

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Received 29th May 2024; Accepted 1st November 2024; Available online 31st December 2024

Abstract: The objective of this study is to evaluate the impact of water magnetization technology from various locations in Basrah province on the productive and physiological performance of local ducks. A total of 105 one-day-old, unsexed local ducks were randomly distributed into seven treatments with three replicates per each (5 birds per replicate). The control treatment used reverse osmosis (RO) water. The treatments were: T1: tap water from Zubair city; T2: magnetized tap water from Zubair city; T3: tap water from Ashar City; T4: magnetized tap water from Ashar City; T5: tap water from Qurna city; T6: magnetized tap water from Qurna city. The results showed a significant improvement in overall body weight, weight gain, feed intake, and feed conversion ratio in both the second and control treatments. The second treatment also recorded the highest overall drinking water consumption. Additionally, higher values of red blood cells (RBC), hemoglobin concentration (Hb), packed cell volume (PCV) were observed. The control treatment recorded a lower value of heterophils/ lymphocyte ratio (H/L) compared to other treatments. Mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC) were unaffected by variations in water treatments. The use of magnetic water treatment led to a decrease in the concentration of cholesterol, urea, aspartate aminotransferase (AST), and alanine aminotransferase (ALT) enzymes in the blood serum. Conversely, the use of magnetic water led to a significant ($p \leq 0.05$) increase in the glucose, total protein, albumin, and globulin concentrations. In conclusion, the utilization of magnetic treatment in drinking water improved the productive and physiological performance of domestic ducks.

Keywords: Ducks, Magnetic water, Productive, Physiological, Performance.

Introduction

Water pollution has become one of the most urgent issues in the world and in Iraq in recent years due to factors such as excessive rainfall, high salinity, environmental pollution, and factory waste being dumped into rivers and lakes. Consequently, the Basrah province is the most affected area in Iraq. Understanding

the water quality utilized in poultry processing is essential, as it affects the overall well-being and productivity of the birds (Jacobs *et al.*, 2020). Given that clean water is essential for growth and boosts the economic value of poultry products, one issue with water quality is the concentration of