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Comparative Study of Some Hematological, Biochemical and Thyroid Biomarkers on Males and Females *(Gallinula Chloropus)* Water Birds[1]

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ABSTRACT

The current study was objective in clarifying some of the physiological and hormonal characteristics on male and female of migratory water birds *Gallinula Chloropus*, that bought from Basrah market during the winter season. This study conducted on 30 healthy birds was divided into fifteen males and fifteen females and suggest that the male *Gallinula Chloropus* has higher levels of red blood cells count(RBC), hemoglobin(Hb) and Packed cell volume (PCV) than the females, while the total protein, albumin, globulin, calcium, phosphorus, and triiodothyronine (T3) concentrations recorded high significantly in the female than the males. In addition, there is no difference in the levels of Thyroid stimulation hormone (TSH) and blood glucose.

Keywords: *Migrate birds (Gallinula Chloropus), hematological, biochemical and thyroid biomarkers.*

INTRODUCTION:

Moorhen bird is one of many poultry species considered to be a one food source for the Iraqi people (Al-Ibrahimi *et al.,* 2017). Moorhen belongs to the phylum: Chordata: Ornith order: Gruiformes and family Rallidae Genus: Gallinula, widely distributed in central and southern Iraq, able to withstand rain, humidity, temperature, and wind, these birds feed on frogs, insects, fish, grass, and plants, and their sexual roles are partially reversed, with females more aggressive than males.

Moorhen *Gallinula Chloropus* is a socially monogamous and sometimes polygamous rally bird with partial sex role reversal with females more aggressive than the males in winter flocks and more active in courtship and mating, therefore in the line with sociobiological theory (Trivers, 1972). The study of hematological and biochemical parameters play very important role to assess the physiological state of wild birds and to conduct eco physiological or conservation studies, as well as to understand basic physiological parameters and how these parameters vary with age, sex, and life history events. Hematological and biochemical parameters are good indicators of metabolic status and are influenced by various seasonal processes related to molting, breeding, and migration, as well as circadian variability induced by circadian rhythms (Jenni-Eiermann *et al*., 2002). As birds migrate, they are exposed to a variety of stress conditions such as high metabolic demands, physical activity, poor food quality, and quantity of environmental contaminants, all of which may cause changes in hematological parameters (Vleck & Vleck, 2002), which may lead to migration related-disease (Studds & Marra, 2005). Although studies have been conducted on the various factors that affect the health of these birds, they have not been able to determine the serum biochemical, electrolytes and hematological parameters of

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