INTRODUCTION

Quail as one of the poultry kinds which could be used in solving the lack of animal protein in human nutrition, received a little interest in last years. There is a lack of information concerning the nutritional and environmental requirements of Japanese quail under the Egyptian conditions. The quail, because of its higher productivity, growth performance, better efficiency of utilization and resistance to disease, can contribute with other poultry species in covering the demand of animal protein in the countries of the third world.

It has long been recognized that stress can induce changes in muscle metabolism in farm animals and thereby cause differences in meat quality. The influences of stress factors have been particularly focussed upon postmortem glycogen depletion and therefore on the onset of rigor mortis (Gregory, 1996). The role of various stressors, independent of genitic background, has been widely studied in manuals (Bendall and Lawrie, 1962; Fernandez and Tornberg, 1991). Many species of birds, particularly the wild one, are subjected to stressors such as food withdrawal, human contact, handling, catching, transportation, shackling .... etc. The ability to tolerate periods of food scarcity is of potential importance to birds (Shapiro and Weathers, 1981). Total or partial starvation is a real possibility and occurs commonly in many parts of the world (Ali *et al.*, 1984; Jeffrey *et al.*, 1985). The effect of these stressors can be measured in different ways such as differential leukocyte counts and plasma creatinine kinase activity (Mitchell *et al.*, 1992). Little information about the biology of stress was presented for wild type.

The aim of the present study was to investigate the effect of different periods of starvation and dehydration on the physiological aspect of wild quails in comparing with the domestic type. Moreover, the study showed the ability of the bird to return its normal condition if food and water were available after 48 hours of complete starvation. The adaptive metabolic responses to food and water deprivation, and then to the refeeding and rewatering, were investigated by determining the following:

1- Blood picture (RBCs, WBCs, Hb, PCV and erythrocyte indices).

2- Some blood biochemical constituents (protein, lipids, urea, creatinine, transaminase enzymes, alkaline phosphatase enzyme and glucose).

3- Glycogen concentration in liver and muscles.

4- Enzyme activities (AST, ALT & ALP) in liver.