DOI : 10.35124/bca.2019.19.2.3427

Biochem. Cell. Arch. Vol. 19, No. 2, pp. 3427-3431, 2019 | www.connectjournals.com/bca | *ISSN 0972-5075*

DIETARY CHROMNIUM PICLONATE SUPPLEMETATION EFFECTS ON SOME BLOOD PARAMETERS IN MALE RABBITS EXPOSED TO HEAT STRESS

M.J. AL-Saadi

Veterinary Public Health Department, College of Veterinary Medicine, University of Baghdad. Baghdad-Iraq

(Received 21 April 2019, Revised 12 July 2019, Accepted 19 July 2019)

ABSTRACT : Heat stress impairs antioxidant status and increases mineral and vitamin excretion, a complete blood count is a good indicator of general health, as stress and numerous illnesses can modify hematological parameters, especially with regard to erythrocyte and lymphocyte counts. Some Researchers shown that the chromium addition may reduce the impact of stress on the animal, and may act as an intermediary of immunosuppressant in animals exposed to heat stress. This study was carried out, in animal farm for 75 days including 15 days for adaptation periods, twenty four growing male rabbits of local strain, the animals were randomly divided into 4 groups of 6 animals, the first group was positive group and other three group that exposure to heat stress including control negative and two groups that fed with diet supplemented with 300 ppb and 500 ppb chromium piclonat respectively, given water ad libitum,5 milliliters of blood sample was collected from each rabbit biweekly The samples were then stored at +4 °C and processed and used to the laboratory blood analysis Results revealed that all the parameters, to all groups, fall within normal rang that established for rabbits,In spite the differences in the effects of climate condition during whole period ofthe experiment, between the positive control group which still in suitable normal climate condition while animals of other groups exposure to heat stress by temperatures elevation between 30-35 C°,the normal range of values that obtained in results might be attributed to the protective roles of chromium piclonat from Detrimental effects on blood constituents from heat stress, especially the two treated groups, that received 300 pbb and 500pbb of chromium piclonat compared with control negative and positive groups.It could be concluded that, adding chromium piclonat as a feed additive in the diet of animals farm might be avoid the deleterious effects of stress condition particularly environmental heat stress compared with some animal husbandry systems.

Key words **:** Hematological, chromium, piclonate, heat stress, rabbit

INTRODUCTION

Middle East, (including Iraq) are greatly affected by climate change, associated with increases in the frequency and intensity of droughts and hot weather conditions. Since the region is diverse and extreme climate conditions already common (Lelieveld *et al,* 2012). The weather in these region characterized by a long hot period (from April to October), which persist during 8 months of the year with temperature degrees might be reach to 45-52 ºC and it is can be form complex problem in all aspects of animal productions. Exposure of animals to heat stress activates the hypothalamo-pituitary-adrenal axis and hence estimation of concentrations of hormones such as thyroxin, cortisol, and prolactin could be one of the important indicators for assessment of stress in animals heat stress caused decreased in appetite and decrease in dry matter feed intake that lead to loss of weight as well as decrease in reproductively,but farm animal characterized by having special zones of thermal comfort (ZIC), depending up on some factors like relative humidity, degree of sun light strength,and air surrounding speed (Soltan2010), (Sivakumar *et al,* 2010). Rabbits are hoped to play an important role in solving meat production deficiency particularly in the developing countries Which mostly localized in tropical and subtropical regions, rabbits are suffered from many problems related to hot climate particularly heat stress (McNitt *et al,* 2013) (Mousa-Balabel 2004). Rabbits are often used as live models in scientific research where changes in blood count occur, since they handle multiple blood sampling well (Mader 2003), Suitability of rabbit for subsistence agriculture comes from their amazing reproductive capabilities and ability to utilize fibrous portions of forage and agricultural by-products to produce high quality meat (Abdel-Hamid, and Farahat, 2015). There are some Varian method to decreased effects of this stress,such as supplied the animals with halls air conditioners systems or by using some types of feed additives which is more likely to use