

PREVALENCE OF *CRYPTOSPORIDIUM* SPP IN COWS IN SALAH EL-DIN AND ASSESSMENT OF SOME OF BIOCHEMICAL EFFECTS

Mohammed Ali Hamad, Aysir Saleh Mohammed Al-Samarrai and Ashraf Jamal Mahmood

Department of Biology, College of Education, University of Samara, Iraq.

e-mail: marwan.walady@yahoo.com

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ABSTRACT : A total of (270) feces sample were collected from male and female cattle in four geographic area of Salah El-din (Samarra, Balad, Al-delwea and Al-Dujail) for the period between July 2018 and December 2018, in order to investigate the prevalence of *Cryptosporidium* spp and study some of its biochemical effect. The results indicate that the prevalence of *Cryptosporidium* was (24.074%) by using dyeing method by modified Zel-Nelson Stain. Otherwise this prevalence rate was differ according to the region. In which the highest percentage was appeared in Samarra 28.57% and then in Balad 24.39%, 22.27% in Duloyia and 0% in Dujail. The results was also indicate that the prevalence rate of infection was higher in male 31.506% than female 21.319%. The biochemical results showed a significant increase ($P \leq 0.05$) in liver ALT activity in the infected group as compare with control group, also showed a significant increase in the level of Peroxynitrite in infected groups ($P \leq 0.005$) as compared to control group with a significant reduction ($P \leq 0.005$) in the level of glutathione in infected group as compared with control group.

Key words : *Cryptosporidium* spp, ALT, AST, peroxy nitrite, glutathione.

INTRODUCTION

Cryptosporidium, is an extra cytoplasmic and intracellular intestinal protozoan parasite, can cause watery diarrhea in human and animals which include livestock (cattle, goats, sheep, horses and pigs) (Brook *et al*, 2008) wildlife and domestic animals (Natapol and Supawadee, 2018). The parasitic infection of cattle by *Cryptosporidium* may cause important economic effect to farmers due to a chronic or cute gastrointestinal disturbance (Nguyen *et al*, 2007), which may because loss of weight, reduced milk production and sometimes death to the animal (Smith *et al*, 2006). So that the prevalence of parasites in Iraqi cattle were study by many Iraq researcher, in which Hameed *et al* (2014) showed that the prevalence of *Toxoplasma gondii* in Sheep was 46.29% in Salah Adeen Province, while Al-Jubory and Al-Rubai (2016) found that 35.2% of Al-Najaf cattle were infected by *Eimeria* and 35.44% of Baghdad's cattle were infected with *Cryptosporidium* (Al-Zubaidi, 2012), and 13.13% in cattle in Babylon province infected also with *Cryptosporidium* (Altamimi *et al*, 2013).

Parasitic infections involve a wide group of etiological agents that cause acute or chronic diseases, and many of these infections clearly established that trigger the production of reactive nitrogen species-RNS and reactive

oxygen species-ROS (Alexander *et al*, 2017). So this study aim to study the prevalence of *Cryptosporidium* spp between cattle in four geographic area of Salah El-din, and evaluate the effect of parasitic infection to the antioxidant status of the animal.

MATERIALS AND METHODS

Samples collection

The present study was carried out in four geographic area of Salah El-din (Samarra, Balad, Al-delwea and Al-Dujail), 270 samples (male and female) of cows were collected from different ages (less than 12 months) for the period from the beginning of July 2018 to the end of December 2018.

1. Fecal specimens : The specimens was taken directly from the rectum of the cow and kept in clean disposable container, which contain 2.5% potassium dichromate, suitable disposable vinyl gloves should be worn. A direct stain method was used to identification of parasite in fecal specimens by using modified Ziehl-Neelsen stain (Henriksen and Pohlenz, 1981).

2. Blood samples : Blood samples were collected from the animals, the serum samples were obtained from the blood, after centrifugation at 2500 rpm for 15 min, the obtained serum was divided into four parts in disposable