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RAILLIETINA SPP. INFECTION BIRDS IN MISSAN / SOUTHERN OF IRAQ

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Abstract:
Raillietina spp. affects several types of birds such as pigeons and domestic birds. This cestoda is considered as pathogenic parasite, and caused nodular tapeworm disease . This work is the first in Missan governorate, a total of 25 ducks and 20 farm chicken from the Missan market and 30 wild pigeons were taken randomly from some farms at the period from July2020- July 2021. They were examined to search of Raillietina spp. in digestive canal. The current study recorded several infection in all types of birds under the study, it is registered 6 (24%) in ducks, 10(50%) in farm chicken and 20(73.3 %) in wild pigeons. The statistical analysis confirmed the presence significant differences between the birds under the study. The aims of this study to determine Raillietina spp. infections of the birds under the study in Missan/ Southern of Iraq.

Keywords: Raillietina, ducks, farm chicken, wild pigoens, Missan.

INTRODUCTION

The cestodes are one of the most significant parasites of the animal including bird [9], there are several species of *Raillietina:*

R. echinobothrida is parasitic tapeworm belonging to the class Cestoda, it is the most prevalent and pathogenic cestoda in birds [3], Wild Pigeons , farm chicken and ducks are groups of birds that abundant populations associated with human live. Therefore, the current work was conducted to determine the cestodes infections within them.

R. echinobothrida is a hermaphrodite worm [12] .The body of *R. echinobothrida* is composed of a series of body segments and gradually enlarging from the anterior towards the posterior, whitish color, the body can be as long as from 1-25 cm broad [13]. The scolex bears four suckers and a rostellum for attachment to the line intestine host [15] , and there are no digestive system, a number of testes with a pair ovaries are present in each mature segment [8].

R.cesticill, have rounded head like hammer, have four suckers with300-500 thorns. The worm 9-13 cm in long .The genital opening is alternating between the segments, in the middle of the side edge of each segment [5].

R. tetragona, oval head with several rows of thorns as T letter, the head have oval suckers with several thorns as hammer, the worm aproximatly 35 cm in [5], and other species.

Raillietina requires two hosts are birds and ants, The adult life is spent in the intestine of the definitive host (birds) , and other period is in intermediate host (ants) , [7], Gravid proglottids have a large numbers of egg capsules are passed out with the feces of infested fowl. The larvae (onchospheres) are ingested by ants and develop into mature cysticercoids in abdominal cavity, this infective stage to birds [8].

Raillietina is as one of the most pathogenic cestoda, causing conspicuous intestinal nodules in fowl, the symptom is termed (nodular tapeworm disease) [9]. Intestinal nodules result necrosis of intestinal villi, accompanied by anaemia with increase of leukocyte counts and decrease of serum protein . The nodules up to 6 mm in diameter, which often cause catarrh and enteritis [3]. Naturally infected birds were dewormed in 24 hours by using mebendazole orally (25 mg/kg body weight and higher), without side effect is apparen, also Al-bendazole was shown to be highly effective [10].

MATERIALS AND METHODS

A total of 25 ducks and 20 farm chicken from the Missan market and 30 wild pigeons were taken randomly from farms by a hunting rifle at the period from July2020-July 2021. They were examined to search of *Raillietina* spp. in digestive canal. Two methods used in this study, the first: each part put in petri-dishes with normal saline 0.9%NACL The recovered cestodes stained with acetocarmine and passed through a series of concentration of alchohol , then immersed in canada balsam on slides. Used light microscope 40X to diagnose it depended on method Gracid and Ash , 1979 [5], (Photo 1) .The second method; The worms were cut to segments of 1 cm and placed between two slides and tied with a cotton thread , then tha samples were put in 10% formalin for 3-7 days, then put in date vinegar for

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7-15 days, after which the samples were extracted and placed in canada balsm, finaly examined under the light microscope 40x (photo 2) [2]. Used statistical package for the social sciences (spss v.24) by anova of statistical analysis.

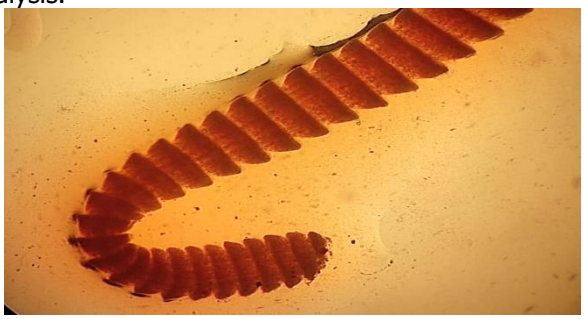

Photo 1: Mature proglottide of *Raillietina* spp. dyeing by acetocarmine under the light microscope (40X).

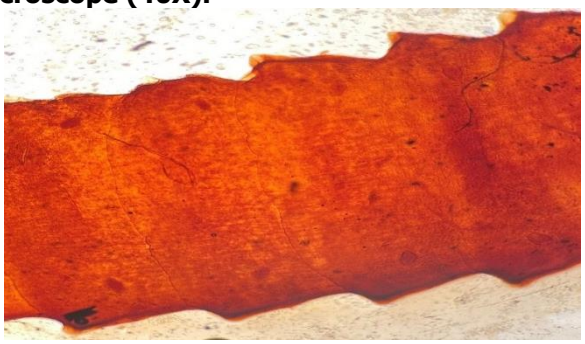

Photo 2: Mature proglottide of *Raillietina* spp. dyeing by date vinegar under the light microscope (40X)

RESULTS AND DISCUSSION

Raillietina spp. affects several types of birds such as pigeons and domestic birds, this cestoda is considered as pathogenic parasite, and caused nodular tapeworm disease that effects on the health of infection birds such as retardation of growth, emaciation [12] . Two species classified in this work, this worms classification depended on toxonomic key of Molin 1858 and described by researchers [3].

R. echinobothrida was distinguished by color was white, length of more than 25 cm and a rounded head, the neck is short and wide, the body can be as long as from 1-25 cm broad [13]. The scolex bears suckers for attachment to the line intestine host (photos 3-6), this correspond with [14].

R. cesticill, have rounded head like hammer with four suckers (photo 7) , the worm 9-13 cm in long [6]. The study revealed the presence of *Raillietina* in the intestines of the tested duck, farm chickn and wild pigeons, this birds were used due to their availability in this study area as well as in the market and farms. A current work used 75 birds to check the presence of worms and found that 6 (24%) were infected in ducks, 10(50%) in farm chicken and 22(73.3%) in wild pigeons (Table1 , Fig 1) The statistical analysis confirmed the presence significant differences between this birds under the study ($p>0.05$) , The results agree with [3], and [4] in ducks, High rate of infection in wild pigeons may be due to feeding on ants or beetle , this insects as essential intermediate hosts to *Raillietina* spp. [5]. *Raillietina* spp. record is the first in Missan governorate (Southern of Iraq).

The two methods that were used in dyeing were similar in the results and the clarity of the structures of worms , two methods used in this work to encouragement the researchers to use alternatives when the materials were not available , such as dyes , [1] used red beet extract.

Photo3. *Raillietina* spp. directly after extracting from intestines of infected birds.

Photo 4: Measurements mature proglottide of *Raillietina* spp.

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Photo 5: length (20-23 cm) of *Raillietina* spp.

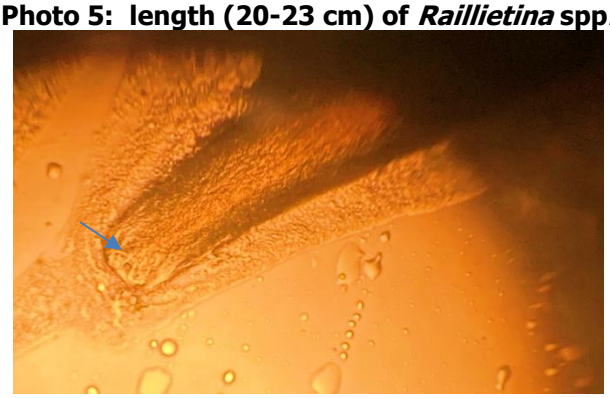

Photo 6: head &neck (suckers) of *R. echinobothrida*

Photo 7: head, neck & immature proglottide of *R. cesticill* .

Table 1: Infection ratio of *Raillietina* spp. in birds in Missan.

Birds	Total number	Total infections	Infection ratio%
Ducks	25	6	24
farm chicken	20	10	50
wild pigeons	30	22	73.3
Total	75	38	50.6

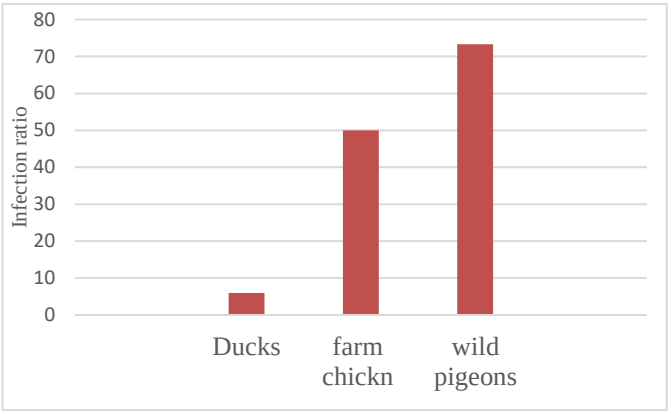

Fig (1) Infection ratio of *Raillietina* spp. in birds in Missan.

CONCLUSION

Find high infection rates of *Raillietina* spp. in Iraqi birds, and higher rates of wild birds than local birds . Can be used more than one method to dye tapeworms.

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