



Prevalence of Lice Parasite, *Menopon Gallinae*, in Local Chickens in Samarra

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Abstract

The present study aimed to determine the ectoparasite infection in domestic chickens. Where it was possible to obtain (80) sample of chickens from both sexes from the fields and local markets to determine the widespread external parasites. Where the study indicated the diagnosis of a common parasite, *Menopon gallinae*, with an infection rate of 43.75%. The study also recorded the highest rate of infection during the month of November, at 70%, while the lowest rate was in December, 28%. The study also showed changes in the rate of infection according to sex, as the highest rate of infection was recorded in females, reaching 50%, while the rate of infection in males was 33.33%. When studying the presence of infection according to the location of the birds and their livelihood, it was found that the highest rate of infection of the examined chickens was in the local chickens taken from the local markets by 62.5%, while the lowest rate of infection was recorded in the chickens that live in the fields by 31.25%.

Key Words: Lice, Prevalence, Ectoparasites.

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Introduction

Birds are exposed to parasitic infections like other animals as a result of their migration and exposure to different conditions, which leads to multiple infections, in terms of quantity and quality, as the effect of parasites ranges from a slight effect to an effect that leads to the death of the host. The economic importance of parasite is evident in the extent to which they cause various damages to an infected bird that may lead to its death (Nnadi and George, 2010). Domestic chickens feed on a wide range of foodstuffs such as grains, fruits and insects that can harbor the infectious stages of parasites and thus cause parasitic infection (Oniye *et al.*, 2001). Parasitic infection of domestic birds causes a health and economic problem and is also a source of infection for many poultry, wild birds and humans (Anshnafi and Shetu, 2004). Poultry are

infected with different types of external parasites such as ticks, lice, and scabies mites that live on the skin and feathers of chickens, permanently or temporarily (White *et al.*, 2009; Al-doury, *et al.*, 2019). Which leads to great economic losses because it transfers the protozoa to the chickens, which directly affect their production of meat and eggs because they feed on the blood of the chickens (Jacquie, 2015). In view of the lack of studies that dealt with parasitic diseases in local chickens in the city of Samarra, the current study aimed to find out the prevalence of external parasites that infect local chickens and to clarify some criteria related to the epidemiology and spread of infection.

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Patients and Methods

Sample Collection

This study was conducted at the Veterinary Hospital in the city of Samarra, and through the pathological cases received by private veterinary clinics and field trips for the period from September 1, 2019 until the end of March 2020, 80 chickens of *Gallus domesticus* were collected. 30 males and 50 females, with ages ranging from 3 to 12 months. The skin and feathers were examined by the macroscope examination and by using a magnifying lens, from head to foot, through the neck, wings and thighs, in order to isolate ectoparasites. Examples of ectoparasites (lice) were taken from the body by using tweezers and kept in separate glass bottles and the information was recorded on them during the examination of the model, after that the lice were transferred to ethyl alcohol at a concentration of 70% for preservation and then placed in a solution of potassium hydroxide at a concentration of 10% for five minutes with heating to dissolve Suspended substances and dissolving the solid keratin layer and clarifying the internal structures for the purpose of establishing the diagnosis.

Results and Discussion

Diagnostic and Descriptive Study

After collecting 80 sample from birds and after making an accurate diagnosis of the parasite, the results showed the presence of ectoparasites represented by *Menopon gallinae*, where one type of lice called shaft lice was isolated, also called small body louse, as it looks similar in appearance to body lice. A little younger than him. It settles on the feathered blade of the chicken body and does not affect the young chickens until it is fully feathered. It is pale yellow in color, medium in size, about 2 mm in length, and the head is triangular in shape (Ahmet and Bilal, 2013). This is with the study of AL-Nakshabandy that contains the study of the prevalence of ectoparasites in domestic chickens (AL-Nakshabandy, 2002).

The General Rate of Infection of Chickens with the Menopon Gallinae

The results showed in Table No. (1) the presence of 35 infested chickens with a rate of 43.75%, and 45 healthy chickens out of a total of 80 chickens. This may be attributed to the bird’s living conditions and the environment in which it is found. The

above results are similar to Hussain, 2016 recorded in its study to diagnose internal and external parasites and measure some hematological parameters in some species of raptors in Dhi Qar governorate where the rate for infected birds was 57.38% (Hussain, 2016). The results are also close to what Ali, 2015 found, in his study of parasites that affect female domestic chickens in the city of Sharqat, as the results of the study showed that 48% of domestic chickens were infected with several types of internal and external parasites (Ali *et. al.*, 2015). This result coincided with most studies conducted on Iraqi birds, whether resident or migratory, which showed that lice come in the first place and high rates of infection, as both lice and mites are among the most important external blood-sucking parasites in poultry (Kilpinen *et. al.*, 2005). Both mites and lice may cause great problems for breeders through the possibility of their direct impact on body weight, egg production and sperm production in roosters, in addition to the inconvenience of workers in poultry fields (Bellanger *et. al.*, 2008).

Table 1. The number of cases and the percentage of infection with lice in chickens

Infection	The scientific name	No. infected poultry	Percentage
Lice	<i>Menopon gallinae</i>	35	43.75%

The results indicated in Table No. (2) the changes in the infection rate according to the months of the year. The highest rate of infection reached its levels in the month of October, when the rate reached 70%, while the lowest rate was in the month of December, when it reached 28%. No infestation rate was recorded during the month of September, perhaps due to the widespread and ease of infection with the host, which is usually present in places of feeding, and the feathered louse is limited to areas with wet seasons that continue during the year (Fabiyyi, 1980).

Table 2. Number of cases and percentages of chicken infection cases, according to the months of the year

Months	Examined chickens	infected chickens	Percentage
September	5	0	0.0 %
October	10	7	70 %
November	20	10	50 %
December	25	7	28 %
January	10	6	60 %
February	15	5	33.33 %
The total is 6 months	80	35	43.75 %



This study is in agreement with what was reported by Anisuzzaman, 2005 in Nigeria where the ratio is Infection is high for the seasons of the year (Anisuzzaman *et al.*, 2005) and it also agrees with what AL-Nakshabandy stated that the level of infection with *Menopon gallinae* lice was significantly high during the wet seasons of the year and he mentioned that several factors interfere with each other, such as age, season and breeding system (AL-Nakshabandy, 2002). This contradicts with Arya, 2013 where he indicated that the incidence of *Menopon gallinae* is highest in summer compared to winter, and that there is a positive relationship between infection with lice and temperature (Arya *et al.*, 2013).

The study showed in Table No. (3) changes in the infection rate according to gender. The highest rate of infection was recorded in females, reaching 50%, while the rate of infection in males was 33.33%. This is in agreement with a study by Hasan on the spread of external parasites, where the rate of infection of turkeys with biting lice was 42.9% in females and 27.3% in males. Before ectoparasites (hasan, 2018; Lawal *et al.*, 2017) and while researcher AL-Mayali indicated that the rate of infection of turkeys with lice was 10%, where the infection rate of males was higher than that of females, reaching 32% and 12%, respectively (Al-Mayali and Abdulkadhim 2015).

Table 3. The number of cases and the percentages of lice infestation according to the gender of the birds

Examined chickens	Male				Female			
	No.	Normal	Infection	(%)	No.	Normal	Infection	(%)
80	30	20	10	33.33%	50	30	25	50%

The study also recorded in Table No. (4) that the highest percentage of infection was in chicken samples collected from the local market by 62.5%, while the lowest percentage was recorded in chickens collected from the fields by 31.25%. The reason is due to the feed used in the feed, which is resistant to most parasitic infections, as well as the increased health awareness of field breeders who have a good level of scientific experience and their help with veterinarians and rapid treatment during the emergence of any infection in poultry (Abduleqader *et al.*, 2007).

Table 4. The number of cases and the rate of infection, according to the livelihood of the birds

living place	Examined chickens	infected chickens	Percentage
Local markets	32	20	62.5%
Fields	48	15	31.25%

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