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Epidemiological Study of Lice Species in Chickens in Baghdad

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Abstract: The current study was conducted to understand the distribution of lice species in some poultry fields in some Baghdad regions from 100 chickens with 20 from each of the five locations. These were examined by inspection whole body and, then used kit for diagnosis. The maximum infestation was 60% in Al-Sheha region followed by Al-Zedan, Al-Rashedia, and Al-Tagi. The incidence of lice species *Menacanthus corntus*, *Menopon gallinae*, *Columbicola columbae*, *Aaticola crasssicorins*, and *Saemundssonina lari* were 8, 14, 9, 5 and 6% respectively. *Menopon gallinae* was the most prominent species (14%) followed by *Columbicola columbae*, *Menacanthus Corntus*, *Saemundssonina lari*, and *Aaticola crasssicorins* (9, 8, 6 and 5% respectively). The highest lice species in region was *Menopon gallinae* and *Saemundssonina lari* (20%). followed by *Menacanthus Corntu* 15% in and Al-Tagi while the incidence of *Columbicola columbae*, *Menopon gallinae*, and *Aaticola crasssicorins* was 20, 15 and 15% in Al- Al-Shehar In Al-Tagi region, the most abundant lice species was *Menacanthus and Menopon gallinae* (15% for both species). The total incidence of lice species was 42 percentage.

Keywords: Lice species, *Menacanthus corntus*, *Menopon gallinae*, *Columbicola columbae*, *Aaticola crasssicorins*, *Saemundssonina lari*

Poultry production is one of the economical households in many developing countries. At present poultry industry is facing several challenges, including diseases, including the problem of poultry lice common in poultry flocks (Hofacre 2002, Mbuza et al 2017). Lice are considered external parasites and feed on the chicken body from the outside. Poultry lice feed on a chicken's dead skin, their blood, feather shaft debris and anything else they find appetizing on a chicken (Mazurek 2000, Sangaré et al 2016). The addition of any new chickens into a flock can be dangerous if are not quarantined and monitored before introducing to the flock (Martin and Mullens 2012, Kumar et al 2016). Generally, chickens can handle a few mites and takes good care of it by dust bath. Lice multiply quickly and leads to the appearance of the anemic problem due to blood loss. An anemic chicken has a weakened immune system, and can easily contract other infections and diseases. The biting lice that infest chickens feed on skin flakes, feathers and scabs, and fresh blood if it is available on the skin surface, Aim of the current study is the determination of the distribution of lice species that spread in chicken flocks in Baghdad province.

MATERIAL AND METHODS

Collection of samples: During September 2019 to January 2020, the chewing lice were examined from five different regions (Al-dorha, Al-rashedia, Al-zedan, Al-sheha and Al-tagii) in Baghdad from 20 samples from each region collected randomly. The feathers of each bird were carefully examined, and the birds were placed in nylon bags contain

chloroform in cotton pieces for fifteen minutes and then the lice collected and preserved in 70% ethanol and cleared in 10% KOH then washed by distilled water. Then passed in alcohol series 70, 80, 90 and 99% and examined according to the methods of Dik and Uslu (2011). The identification of the lice species was carried out according to Price et al (2003).

Samples examination: Samples were placed in a cold potassium hydroxide (KOH) solution then examined under the microscope. The ectoparasites were identified according to their morphological characteristics, using the entomological diagnostic guidelines.

RESULTS AND DISCUSSION

The maximum infestation was in Al-Sheha region (60%) followed by Al-Zedan, Al-Rashedia, and Al-Tagi region (Table 1). In Al-Zedan *Menopon gallinae* and *Saemundssonina lari* were dominated species (20%) followed by *Menacanthus corntu* 15%. In Al-Tagi region the incidence of *Columbicola columbae*, *Menopon gallinae* and *Aaticola crasssicorins* was 20, 15 and 15% in Al-Sheha region respectively. In Al-Tagi region the most dominated was lice species *Menacanthus and Menopon gallinae* with percentage (15%) for both species. The percent incidence of lice species *Menacanthus corntus*, *Menopon gallinae*, *Columbicola columbae*, *Aaticola crasssicorins*, and *Saemundssonina lari* were 8, 14, 9, 5, and 6%, respectively (Table 2).

Chewing lice like *Menacanthus Corntus*, *Menopon gallinae*, *Columbicola columbae*, and *Saemundssonina lari* are wide spread poultry ectoparasites feed on the blood of a wide

Table 1. Percentages of lice species in different regions of Baghdad

Region	<i>Menacanthus cornutus</i>	<i>Menopon gallinae</i>	<i>Columbicola columbae</i>	<i>Aaticola crassicornis</i>	<i>Saemundssonina lari</i>	Total
Al-Dorha	10	5	5	0	5	35
ARashedia	0	15	10	0	0	25
Al-Zedan	15	20	0	0	20	55
Al-Sheha	5	15	20	15	5	60
Al-Tagi	15	15	0	5	0	35

Table 2. Lice infection of the chicken

Lice species	Percentage
<i>Menacanthus Cornutus</i>	8
<i>Menopon gallinae</i>	14
<i>Columbicola columbae</i>	9
<i>Aaticola crassicornis</i>	5
<i>Saemundssonina lari</i>	6
Total	42

The total percentage of lice species *Menacanthus cornutus*, *Menopon gallinae*, *Columbicola columbae*, *Aaticola crassicornis* and *Saemundssonina lari* were 8, 14, 9, 5, and 6 percent (Table 2). The total percentage was 42%

variety of birds, including chickens, pigeons that cause problem on animals. The distribution depends largely on host's distribution. Many factors play an important role in rates of spreading of lice such as season, temperature, humidity, nature of lice, nature of the geographic area, using disinfection or not (Ece and Tünay 2018). The high percentage of *Menopon gallinae* in Al-Sheha region may related to the environmental condition in that region which include humidity and temperature also the presence of the host. The was conducted in Algeria (Meguini et al 2018), Japan (Saxena et al 2007) and New Delhi (Kumar et al 2016) on incidence of lice. According to present study, the percentage of distribution of *Menacanthus cornutus* is close to Sychra et al (2008). However, Rezende et al (2016) recorded high rate as compared with present study. Jassim and Hadi (2019) observed higher incidence of *Columbicola columbae* than present study. The percentage of *Aaticola crassicornis* in chicken was similar to earlier worker (Rezaei et al 2016, Hussam and Hadi 2019). Kumar et al (2017) recorded the prevalence in adult's males were higher than adult females. The distribution depends largely on the distribution of its hosts, urban and suburban areas (Fukatsu et al 2007, Kumar et al 2016) and types of birds (Mohammed 2014). The average distribution of lice parasites was more in urban areas (28.5 %) than in rural areas (14.98 %), and therefore the nature of the geographical area is one of the important factors that control the prevalence (Ahmed et al 2017). The difference in the recorded percentages is due to the difference in the study area, the number of birds

examined and climatic conditions which play an important role in increasing or decreasing the rate of infection with external parasites.

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