
A Study on Ectoparasites of Domestic Chickens in Certain Areas of Tikrit City

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ABSTRACT:

The present study was conducted to investigate the presence of ectoparasitic insect infestations in domestic chickens across several areas of Tikrit city chicken sales outlets, Al-Alam, Al-Bu Ajeel, and Al-Mahzam. A total of 130 domestic chickens of both sexes were examined between September 2025 and January 2026. The study results revealed infestations by in two species of lice is - *Goniocotes gallinae* and *Menacanthus stramineus* - and the soft tick species is *Argas persicus*. Among the lice, *Menacanthus stramineus* showed the very highest infestation rate (78%), while *Goniocotes gallinae* showed the lowest (40%); the soft tick one type is *Argas persicus* showed an infestation rate of 62%. Regarding geographical location, the Al-Alam area recorded the very highest infestation rate (88%), while the Al-Mahzam area recorded the lowest is (40%). In terms of sex, females exhibited a significantly higher infestation rate than males is (73.68% versus 33.3%, respectively). Regarding the time of year, the very highest infestation rate was is recorded in September (90%), with high rates also observed in January (77.27%), while the lowest rate was recorded in December 33.3%.

KEYWORDS

Domestic chickens, lice, *Argas persicus*, Tikrit city .

Introduction:

Chickens is was constitute a vital component of livestock—particularly in both rural and urban areas—as they provide a significant source of animal protein in the form of the eggs and many meat (Hill, 2023). However, they can serve as reservoir hosts for numerous ectoparasitic infestations, potentially leading to economic losses within the poultry sector (Taylor & Wall, 2016). Domestic chickens are susceptible to various ectoparasitic insects and arachnids—such as lice, ticks, and mites—that infest their feathers and skin either temporarily or permanently. These parasites are responsible for transmitting blood protozoa as well as numerous pathogens, including *Salmonella spp.* and *Borrelia spp.* Consequently, by feeding on the birds' blood, these parasites directly impact egg and meat production (Jacobe *et al.*, 2025).

Materials and Methods:

This study involved the examination of 130 domestic chickens of various ages and both sexes between September 2025 and January 2026 to investigate ectoparasitic insects affecting domestic chickens in various areas of Tikrit (specifically, chicken sales outlets in the city center, Al-Alam, Al-Bu-Ajeel, and Al-Mahzam). Examination was conducted via visual inspection of all body regions, including the head, neck, breast, wings, and the area surrounding the vent. Tools used included a light

source (lamp), a comb, and forceps. Samples were preserved in glass tubes containing 70% ethanol; relevant data were recorded on the tubes and on specific forms for each sample. The samples were then transported to the Entomology Laboratory at the College of Education for Women. Subsequently, they were placed in a 10% potassium hydroxide (KOH) solution and heated for 5–7 minutes to dissolve the hard keratinous material on the insect's body wall. Identification was performed using a dissecting microscopes, relying on morphological characteristics described by Soulsby (1982).

Results and Discussion:

The study results revealed the presence of two types of lice and one type of tick. The highest prevalence among lice was recorded for *Menacanthus stramineus* (78%), while the soft tick *Argas persicus* showed an infestation rate of 62%. These findings align with the study conducted by Al-Zubaidi (2015) in Diyala Governorate, which also recorded as shown in Table (1).

Table (1): Percentages of chickens infested with various types of external parasitic insects

Infection rate (%)	Number of infected chickens	Number of chickens examined	Name of the parasitic insect
%78	47	60	<i>Menacanthus stramineus</i>
62%	28	45	<i>Argas persicus</i>
%40	10	25	<i>Gonoicotes gullinae</i>
65.38%	85	130	Grand Total

Regarding the prevalence and distribution of infestations involving both lice and soft ticks across different geographical locations, the Al-Alam area recorded the highest infestation rate at 88%, followed by Al-Bu Ajeel at 66%. Slaughterhouses within the city center recorded an infestation rate of 50%, while the Al-Mahzam area recorded the lowest rate at 40%. Table (2) shows that the differences between these areas are not substantial; this may be attributed to a lack of treatment for infected cases, low standards of living, and poor sanitation, all of which contributed to the spread of the infestation. These findings align with those of Al-Iraqi and Amin (2012) in Erbil Governorate, who also observed variations in infestation rates based on geographical location and the level of sanitation and hygiene maintained at the site

Table (2): Percentages by geographical location

Infection rate(%)	Number of infected chickens	Number of chickens examined	Region name
%50	15	30	Massacres
%88	40	30	AL-Alam
%66	20	45	Al-Bu Ajeel
%40	15	25	Al-Mahzam

The results of the current study regarding the relationship between sex and external infestation by parasitic insects indicated that females exhibited higher infestation rates than males throughout the months of the study; infestation rates were 73.68% for females and 33.3% for males, respectively (Table

3). These findings align with those of Al-Dulaimi and Al-Amiri (2015), who also reported higher infestation rates in females compared to males.

Table (3): Percentages of infection by gender

Infection rate(%)	Number of infected chickens	Number of chickens examined	Gender
33.3%	15	45	male
73.68%	70	95	Female
65.38%	85	130	Grand Total

Regarding the seasonal prevalence of the parasitic insects (lice and soft ticks) in our study, the highest infestation rate was recorded in September (90%), followed by a high rate in October (60.71%). A high rate was also observed in January (77.7%), whereas the rates in November and December were lower – 40% and 33.3%, respectively. These findings align with the study by Lawal *et al.* (2017), as shown in Table (4).

Table (4): Percentage of cases by month of the year

Infection rate(%)	Number of infected chickens	Number of chickens examined	The month
90%	36	40	September
60.71%	17	28	October
40%	10	25	November
33.3%	5	15	December
77.7%	17	22	January
65.38%	85	130	Grand Total

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