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PREVALENCE OF LICE INFESTING GOATS IN MOSUL

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ABSTRACT

The aim of this study was to investigate the prevalence and to diagnose the species of lice infesting goats from march 2005 until march 2006 in different areas and farms in Mosul. A total of 450 native goats were examined to determine the severity of infestation during the study period. The result revealed that 14.2 % of the examined goats harboured lice or their eggs (nits). Among the infested animals it was reported that 17% were considered as light, 38% moderate and 45% heavy degree of infestation respectively. It was found that the sucking lice *Linognathus stenopsis* was more predominating than the biting one *Bovicola caprae (Damalina caprae)*. It was observed that the highest degree of infestation was in Winter. Mixed infestation was noticed. The clinical signs observed on the infested goats were; itching, emaciation, pale mucous membrane, restless and decrease milk production, hair loss or matted and rough haircut.

دراسة انتشار القمل في المعز في الموصل

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الخلاصة

استهدفت الدراسة التي أجريت في الموصل في الفترة من شهر آذار 2005 إلى آذار 2006 انتشار الأنواع المختلفة من القمل في المعز المحلي. تم فحص 450 حيوان من المعز

المحلي في عدة مناطق متفرقة من الموصل. وقد بلغت نسبة الإصـــابة الكليـــة 4.2 % وان درجة (أو شدة) الإصابات تختلف من درجة بسيطة (17%)، إلى متوسطة (38%) و شـــديدة (45%)، من أعداد الحيوانات المصابة. كما تبين من تشخيص العينات التي تم جمعها وجـــود نوعين من القمل، أكثرهما القمل الماص (*Linognathus stenopsis*) والآخر القمل العـــاض (*Damalina caprae*) كما لوحظ وجود الإصابات المختلطة بكلا النوعين من القمل وكانـــت نسبة الإصابة عالية في فصل الشتاء. أما سريريا فقد تبين وجود شحوب الأغشية المخاطيـــة والهزال والحكة وقلة الشهية والنوم مع نقص في إنتاج الحليب في إناث الحيوانات.

INTRODUCTION

Numerous species of biting or chewing lice and sucking lice were obligate ectoparasites of domestic animals. Lice are transmitted primarily by contact between hosts, and it is largely host specific. Lice may be found on goats throughout the world (1). They are more active and reproduce most rapidly in cool conditions (2). It causes irritation of skin, scratching, licking, and loss of milk production (3). Mehrotra *et. al.*, stated that the maximum rate of infestation with the different species during winter followed by autumn, and several authors recorded that goats were infested by both sucking and biting lice (4). Al-Obaidi, in Mosul reported that 9.75 % of the goats were infested in both types of lice in his study (5). Two types of lice infested in all animals were sucking and biting lices. The prevalence of lice infestation among different animals differs due to season, locality, and type of breeding and hygienic measures. Many authors reported that goats are infested with Linognathus *stenopsis* and *Damalina caprae* (6, 7).

MATERIALS AND METHODS

Four hundred and fifty goats were examined in Mosul area, from different breeds, ages, and sex, 1 – 5 years old at Kogjali, Rasheediya, and Hadba' area. The lice were collected from infested animals according to Bram (8) using a brush, comb, fine forceps and hand lens 10 X. lice were collected from neck, back shoulder, and hip from examined animals. Estimation of the degree of infestation, where 1 – 5 living lice detected in the examined area were considered light, 6 – 20 lice moderate

and over 20 lice considered as heavily infested (6). The specimens preserved in 70 % alcohol. Examination and classification according to (9, 10 and 11).

RESULTS

The results of this study are shown in table 1, 2 and 3 revealed that 64 goats out of 450 examined animals were found to be lice – infested 14.2 %. It was found that the higher percentage of infestation was in winter 19.2 % followed by autumn 18 %. Also the results showed that 17% of the infested animal's harboured light degree of lice infestation, 38% moderate, and 45% heavily infested goats.

Table 1. Seasonal Incidence of Lice Infestation of Goats

Season	No. of examined goats	No. of positive samples	% of infestation
Spring	120	12	10 %
Summer	100	9	9 %
*Autumn	100	18	18 %
*Winter	130	25	19.2 %
Total	450	64	14.2 %

* Significant at $P < 0.05$ in comparison of winter and autumn to other seasons.

Table 2. Degree of Lice Infestation of Goats

Degree / Season	Light *	Moderate **	Heavy ***
Spring	3%	9%	6%
Summer	3%	6.2%	4.7%
Autumn	4.6%	10.3%	14%
Winter	6.4%	12.5%	20.3%
Total	17%	38%	45%

* The number of lice in one square inch 1 – 5. ** The number of lice in one square inch 6 – 20. *** The number of lice in one square inch over 20.

Concerning the lice species the results revealed that 71% of the animals were infested with sucking lice *Linognathus stenopsis* as seen in Fig. (1) in which long narrow pointed head of the anterior part of this sucking louse were seen. Fig (2) shows adult sucking louse *Linognathus stenopsis* in which small insect, with small narrow elongated head and the second and third pairs of legs are larger than the first pair. 29% of the others were infested with (biting lice) *Damalina caprae* as seen in Fig (3) in which the head was boarder than long and the antennae is composed of five segments.

Table 1. Species of Lice Infestation Goats in Mosul

Species of lice	No. of Positive sample	%
Sucking lice *Linognathus stenopsis*	45	71%
Biting lice *Damalina caprae*	19	29%
Single infection	31	48%
Mixed infection	33	52%

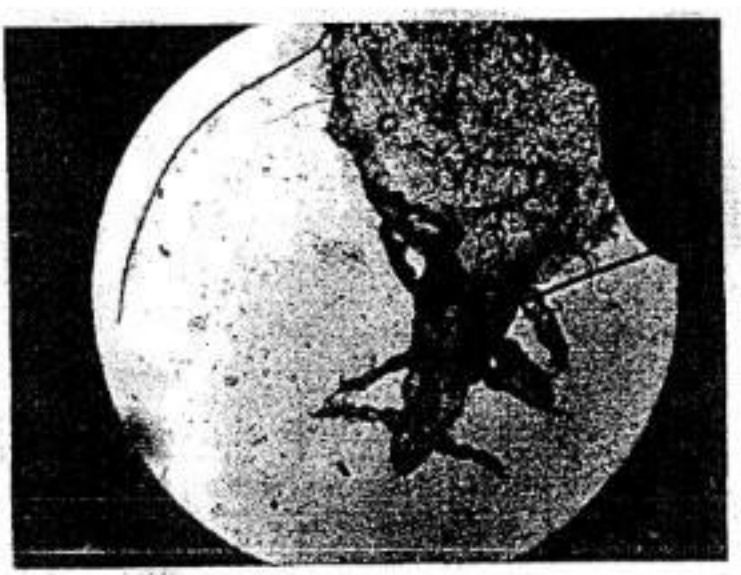

Figure (1): Adult sucking louse, *Linognathus stenopsis* anterior part of the parasite (80X)

Figure (2): Adult sucking *louse Linognathus stenopsis* (40X)

Figure (3): Adult biting louse *Damalina caprae* (40X)

DISCUSSION

The results of this study revealed that 14.2% of the examined goats were infested with different species of lice with various types of severity (light, moderate, and heavily infested). Identification of the collected lice showed that sucking type belong to Linognathus stenopsis 71 % and the biting types diagnosis as Damalina caprae 29% these results agreed with those observed by (4, 6, 7). Concerning the seasonal prevalence it was observed that Winter season was the most suitable and

heavily infested goats were seen, (8, 10). Many studies referred that cold season (Winter) are suitable for propagation with lice infestation, and our result as shown in table (1, 2) are in agreement with those reported by other workers (5, 12). The results of the study showed significant increase of the infestation and severity in winter as compared with other seasons due to bad hygiene and crowdedness of the goats in the farms, where suitable microenvironment of skin and hairs for lice propagation and the direct contact of goats lead to more infection of these ectoparasites in side many animal yards.

In this study the clinical signs (general weakness, anorexia, alopecia, itching, scratching, pale mucous membrane and decrease milk production) were clearly observed in chronic bad hygienic and mixed heavily infested goats, while low degree infested animals were not so affected and show no abnormal clinical signs.

REFERENCES

1. Soulsby EJL Helminthes, Arthropods and Protozoa of domesticated animals 7th ed. Baillier and Tindall, London, 1986. PP: 370 – 372.
2. Gary M, Lance D. Medical and Veterinary Entomology. Academic Press, 1st ed. 2002: 55-57.
3. Cameron TVM, The Parasites of domestic animals. A manual for Veterinary students and surgeons. Adam and Charles Black 4, 5 and 6, 1951.
4. Mehrotra P, Singh T. Haematopinus species found on Indian goats. Vet Rec 1972; 4: 434.
5. Al-Obaidi, QT. Clinical and Hematological Studies of Single Infection with Some Blood Protozoa, Endo and Ecto–Parasite in Native Goats in Mosul. Iraqi J Vet Sci 2006; 20 (2): 284 – 297.
6. Sall AM. Sucking Lice of genus Linognathus infesting certain mammals in Egypt. First Mediterranean Conference on Parasitology, Izmir, Turkey 1977.
7. Tompson MS. Parasitic Fauna of goats in Philippine. Philippine J Vet Med 1981; 20 (1): 1 -37.

8. Eram R. A. Surveillance and collection of Arthropoda of Veterinary Importance. Agriculture Handbook 1978: 518.

9. Ricardo LP. Slide mounting of lice, a detailed description of Canada-Balsam Technique. New Zealand Entomologist 1978: 6.

10. Tuff BM. A key to the Lice of man and domestic animals. The Texas J Sci 1977; 28: 145 – 159.

11. Kim KC, Ludwing HW. The family classification of the Anoplura. Systemic Entomology. 1978; 3: 249 – 284.

12. Hallam GJ. Transmission of *D. ovis D. caprae* between sheep and goats. Aust Vet J 1985; 62: 344 – 345.