

SOME STUDIES ON SKIN AFFECTIONS AMONG LOCAL AND IMPORTED CAMELS IN HALAIEB, SHALATEEN AND ABOU-RAMAD AREAS.

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SUMMARY

A total of 47 skin scrapings from 27 local and 20 imported camels showing skin lesions were collected during Summer (32) and Winter (15), prepared and examined microscopically for the presence of mange and or ringworm infection. The overall prevalence rates of mange were 14.81% and 30% for local and imported camels and 18.75% and 26.66% in Summer and Winter seasons, respectively. *Sarcoptic scabiei* var *cameli* was the only identified mite species.

Ringworm infection rate was 14.81% and 12.5% in local camels in Summer and Winter, respectively. No cases of ringworm were observed in imported camels.

Clinical examination of 185 local and 76 import-

ed camels, revealed that the overall prevalence rate of tick infestation was 44.86% in local camels and 57.89% in imported camels. Tick infestation was peaked during Summer (62.29%), followed by Winter (55.17%), then lower rates were recorded during Autumn (46.26%) and Spring (34.66%). Concerning the identified ticks, only 2 spp. of ticks were identified, one of them *Hyalomma dromedarii* was the most prevalent (81%) and was usually found on camel's body, while the other species was *Ornithodros savagnyi* which recorded in few cases (19%) and was found usually in camel resting places.

INTRODUCTION

The reported external parasites of camels include mainly *Hyalomma dromedarii* (Steward, 1950, Higgins, 1983, Pegram and Higgins, 1992 and Anwar and Khan, 1998) , *Hyalomma anatolicum*

(Al-Ani et al., 1998) and *Sarcoptic scabiei* var *cameli* (Al-Ani et al., 1998, Sena et al., 1999, Zeleke and Bekele, 2000, VeerñSingh et al., 2001, Agab and Abbas, 2001).

In Egypt, Hassan (2001) recorded eight species of ticks, of which only one of them belonged to family Argasidae (*Ornithodoros savignyi*), the others belonged to four genera in family Ixodidae. On the other hand, Abou-Elnga et al., (2004) identified 2 species of ticks, *Hyalomma dromedarii* and *Hyalomma anatolicum*. Camels at Shalateen city, Red sea governorate, were proved to be infested with *Sarcoptic scabiei* var *cameli*, *Hyalomma dromedarii*, *Amblyoma lepidum* and *Ornithodoros savignyi* (Mahran and Saleh, 2004).

The most commonly recorded cause of ringworm in camels was *Trichophyton verrucosum* (Fadl-mula et al., 1994, Abou-Eisha and El-Attar, 1994 and Alhendi et al., 1998). On the other hand, Abou-Zaid (1995), reported that *Trichophyton verrucosum* and *Microsporum canis* were isolated from 13 and 5 camels, respectively.

The aim of the present work was to study the prevalence of external parasites (Mange and Ticks) and Ringworm infection among local and imported camels.

MATERIAL AND METHODS

Animals:-

During the period extended from September 2003

to August 2004, a total of 261 dromedary camels (185 local and 76 imported) of different ages (3-8 years) were clinically examined for tick infestation and the camels showed recent active skin lesions (47) were additionally subjected to skin scraping examination

Samples:

Skin scrapings:-

From 27 local and 20 imported camels showed recent active skin lesions a total of 47 skin scrapings were collected during Summer (32) and Winter (15) to be examined for mange and or ringworm infection.

Ticks:-

About 70 morphologically different ticks were collected from different camels in different localities in the area of study and another 25 ticks were collected from the resting places of these camels.

Skin scraping examination:

Skin scrapings and some stumps of broken hairs were taken from the edges of recent active skin lesions suspected to be mange or ringworm.

- The collected materials were processed for ringworm examination according to (Koneman and Roberts, 1985) by placing a part of the scraping materials with a drop of 10% potassium hydroxide (KOH) solution on a clean glass slide, covered with a cover slide, heated gently and left in humid chamber for 2 hours. Microscopical examination was then done for

detection of fungal elements.

b. For parasitological examination, skin scrapings were mixed with 10% KOH solution in a test tube, heated indirectly in a water bath and removed before boiling then centrifuged at 3000rpm for 5 minutes, the supernatant was discarded and the sediment was examined for mites according to (Coles, 1986). Identification of mites was carried out after (Soulsby, 1982).

Ticks were carefully detached from the camels by holding them with a curved forceps and turning them anticlock wise to avoid damage of mouth parts then put in plastic cups containing ethyl alcohol (70%) and few drops of glycerin. Identification of ticks was done according to (Hoogstral, 1978) .

RESULTS

1. Prevalence of mange and ringworm infection among local and imported camels.

As shown in Table (1) the overall prevalence rate of mange was 14.81%, 30.0% and 21.27% for local, imported and total examined camels respectively, and was 18.75% and 26.66% in Summer and Winter seasons respectively. On the other hand, ringworm infection rate was 14.81%, 0.0% and 8.51% for local, imported and total examined camels respectively, and was 12.5% in Summer and 0.0% in Winter.

Sarcoptes scabiei var *cameli* was the only identified mite species in this study. Mange infected camels showed, irritation, restlessness, rubbing their bodies against objectives and presence of

skin lesions characterized by loss of hair and presence of scabs on thickened, keratinized skin. These lesions was found mainly on the neck, brisket, shoulder and or inguinal regions and may be all of them.

Ringworm infected camels showed, skin lesions in the form of circumscribed circular areas of alopecia, scaling and crusting. The lesions involved the face, neck and sometimes limbs.

2. Prevalence of tick infestation:

As shown in Tables (2-4) the overall prevalence rate of tick infestation was 44.86%, 57.89% and 48.65% for local, imported and total examined camels respectively. While it was 62.29%, 46.26%, 34.66% and 55.17% during Summer, Autumn, Winter and Spring seasons respectively.

Ticks identification revealed the presence of only 2 species of ticks, one of them was present on camels themselves which is *Hyalomma dromedarii* (81%, family Ixodidae) and the other was *Ornithodoros savignyi* (19%, family Argasidae) which found in camel resting places.

Tick infested camels showed manifestations of anemia including debility, weakness, decrease of weight gain and paleness of visible mucous membranes. In some cases there was irritation and restlessness due to tick bites. The predilection sites of ticks were the soft regions including axillary, inguinal and perineal regions in addition to inner sides of the ear and nostrils and around the eyes.

Table (1): Prevalence of mange and ringworm infection among local and imported camels.

Season	Number of examined camels			Mange infestations (<i>Sarcoptes scabiei</i>)						Ringworm infections					
	Local camels	Imported camels	Total	Local camels		Imported camels		Total		Local camels		Imported camels		Total	
				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Summer	19	13	32	2	10.52	4	30.76	6	18.75	4	21.05	0	0	4	12.5
Winter	8	7	15	2	25	2	28.57	4	26.66	0	0	0	0	0	0
Total	27	20	47	4	14.81	6	30	10	21.27	4	14.81	0	0	4	8.51

No.= Number.

% = Percent.

Table (2): Seasonal prevalence of tick infestations in local camels.

Season	Total examined camels	Tick infested Camels	
	No.	No.	%
Summer	37	20	54.05
Autumn	52	26	50
Winter	59	19	32.20
Spring	37	18	48.64
Total	185	83	44.86

No. = Number % = Percent.

Table (3): Seasonal prevalence of tick infestations in imported camels.

Season	Total examined camels	Tick infested Camels	
	No.	No.	%
Summer	24	18	75
Autumn	15	5	33.33
Winter	16	7	43.75
Spring	21	14	66.66
Total	76	44	57.89

No. = Number % = Percent.

Table (4) : Seasonal prevalence of tick infestations in local and imported camels.

Season	Examined camels	Tick infested Camels	
	No.	No.	%
Summer	61	38	62.29
Autumn	67	31	46.26
Winter	75	26	34.66
Spring	58	32	55.17
Total	261	127	48.65

No. = Number % = Percent.

DISCUSSION

It has generally been recognized that, camels are exposed to wide range of external parasites which irritate, debilitate and resulted in serious tissue damage in the host. Consequently, the studies on the prevalence of camel ectoparasites are world widespread (Higgins, 1983; Muhammed et al., 2001 and Hassan, 2001). Therefore, in the present study the prevalence and seasonal variation of skin affections including mange and ticks as well as ringworm infection were investigated in the area of experiment.

Mange is the most feared and widespread disease affecting the Arabian camel second to Surra (Higgins, 1983). The data obtained in the present work indicated that the overall prevalence rate of mange was 21.27%. This finding is in agreement with Sena et al., (1999), who recorded 21.7% but it was found to be lower than the rate reported by Mohammed et al. (2001) 35%. The prevalence rate among local camels was 14.81% which was lower than that of imported camels 30%. Nearly similar results (15.3% and 31.6%) were obtained by Mahran and Saleh (2004) in Egypt, and Agab and Abbas (2001) in Sudan respectively. This may be attributed to, inadequate management and veterinary care of imported camels specially during the long time of transportation from Sudan to Egypt and over crowding in the quarantine.

Concerning the seasonal variation, it was found

that mange was most prevalent during Winter (26.66%) than Summer (18.75%). these findings are in agreement with the finding of Zeleke and Bekele (2000) and Mahran and Saleh, (2004) and Rathore, (1971) who concluded that, the functioning skin and high ambient temperature during Summer may not favor the activity of mites which may hide in the skin folds to protect themselves from sunlight, as well as gathering of camels during Winter at the same grazing areas and watering points may enhance the transmission of infection from camel to camel and from herd to another.

In our study, the only identified mite species was (*Sarcoptic scabiei* var *cameli*). This result is in agreement with the finding of Anwar and Khan, (1998); Sena et al., (1999) and Agab and Abbas, (2001).

Mange infected camels showed, irritation, rubbing their bodies against objectives and skin lesions characterized by alopecia, scabs on thickened, keratinized skin specially on the neck, shoulder and or inguinal regions and may be all of them. Similar observations were recorded by Higgins, (1983) and Kinne and Wernery, (2003). Camel skin presents a suitable habitat for the growth of some dermatophytes and other potentially pathogenic fungi (Mahmoud, 1993). Ringworm is considered rarely reported in camels (Al-Ani, 1998) and reduces the animal's value not its performance (Köhler et al., 2001) but, the hazard

of zoonotic infection and reduction of animal price gave ringworm a major attention (Osman et al., 2002).

In the present study, ringworm infection was detected in 4 out of 47 total examined camels (8.51%), all of them were local camels with a rate of 14.81%, while it was not detected in imported camels. Higher rates (48%, 33% and 25%) were previously recorded by Mahmoud (1993), Abou-Eisha and El-Attar (1994) and Alhendi et al. (1998) respectively, while lower rates (5.6% and 5.8%) were recorded by Abou-Zaid (1995) and Agab and Abbas (2001) respectively. Concerning ringworm, infection was not detected in imported camels, this may be attributed to the fact that, most imported camels are some what adult and the disease is more frequently present in young camels than adult ones which are rarely affected as previously recorded by Mahmoud (1993); Agab and Abbas, (2001) and Nassif and Osman, (2003) who concluded that, the susceptibility of young animals are probably related to lack of prior exposure to infection and thus absence of immunity. Regarding the seasonal variation, it was found that, ringworm was detected in Summer in a rate of (12.5%), while it was not detected in Winter, this finding is found to be in agreement with the finding of Agab and Abbas (2001) and Khamiev (1982) who reported Summer outbreaks of ringworm in camels in Kazakhstan. The under nutrition during Summer (dry season) can decrease the immunity of the animal and seems to

be an important factor in the spread of the disease in this season. It was found that, younger camels were mostly affected and showing the characteristic lesions of ringworm in the form of circumscribed circular areas of alopecia, scaling and crusting involved the face, neck and some times limbs, this observation is in agreement with that of Al-Ani et al. (1998) and Kähler et al. (2001).

From the data obtained in the present study it is clear that the overall prevalence rate of tick infestation was 44.86%, 57.89% and 48.65% of local, imported and total examined camels respectively. These results are in agreement to some extent with the results recorded by Anwar et al. (1998) who recorded 40.4% and Abou-Elnga et al. (2004) who recorded 54.5%. A higher rate (100%) was reported by Al-Ani et al., (1998), while a lower rate (7%) was reported by Muhammed et al., (2001).

Concerning the seasonal variation, the most favorable seasons for tick infestation were Summer in a rate of 62.29% and Spring in a rate of 55.17%, while lower rates (46.26% and 34.66%) were recorded in Autumn and Winter respectively. This may be attributed to the difference in the climatic conditions which affect the survival of adult and nymph ticks as they are very dependent on the weather conditions as recorded by (Higgins, 1983).

Hyalomma dromedarii was the most predominant

identified tick species (81%) which always found on camel's body. This finding is found to be in agreement with the results previously recorded by Higgins (1983) who concluded that, *Hyalomma dromedarii* is the most widespread camel tick in Saudi Arabia and with Hassan (2001) in Egypt. This may be due to, *Hyalomma* species is highly desert adapted and widely distributed in arid area as recorded by Pegram and Higgins (1992). Another tick species (*Ornithodoros savignyi*) was also identified but in a very few cases (19%) and was mostly found in the resting places of camels. It was previously identified also in lower rates by Hassan (2001) and Mahran and Saleh (2004).

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بعض الدراسات عن الإصابات عن الإصابات الجلدية فى الجمال المحلية والمستوردة فى مناطق خلايب شلاتين وأبورماد

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** قسم صحة الحيوان - مركز بحوث الصحراء

فى هذه البحث تم تجميع ٧٤ كحقة جلدية من ٣٧ جمل محلى و ٣٠ جمل مستورد يعانون من إصابات جلدية وجمعت أثناء فصل الصيف (٣٣) والشتاء (١٥) وقد تم فحص هذه العينات ميكروسوياً وجد أن نسبة الإصابة بالجرب هو ١٤,٨١٪ ، ٣٠٪ فى الحيوانات المحلية والمستوردة وكذلك ١٨,٧٥٪ ، ٣٦,٦٦٪ فى فصل الصيف واشتاء على الترتيب وقد وجد أن حشرة الساركوبتى هو الوحيد التى سببت الإصابة بالجرب .

علي جانب آخر وجدت نسبة الإصابة بالقراع هى ١٤,٨١٪ و ١٣,٥٥٪ فى الجمال المحلية فى الصيف والشتاء على الترتيب ولم تلاحظ أو حالة من القراع فى الجمال المستوردة.

وبفحص ١٨٥ جمل محلى و ٤٦ مستورد وجد أن نسبة الإصابة بالقراع هى ٤٤,٨٦٪ فى الحيوانات المحلية و ٥٧,٨٩٪ فى الحيوانات المستوردة . وكان نسبة الإصابة فى أعلى مستوياتها (٦٣,٣٩٪) فى الصيف وكانت (٥٥,٤٧٪) فى فصل الشتاء وكانت السلالات الموجودة هى هيالوما (٨١٪) والأرنوثودرس (١٩٪) .