

Epidemiological Study of Screwworm Infection in Babylon and Al-Qadisiya Governorates

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Abstract

Study of screwworm infection in Babylon and Al-Qadisiya continued for one year. during this period, the numbers of infected animals in Babylon and Al-Qadisiya were recorded (15890, 2032 respectively). High percents were in sheep in both governorates. Temperature and humidity have a relation with incidence of during all months of the year. Low temperature and high percent of humidity correlated with infection of animals. Distribution in human being is very restricted to individual cases and very few in numbers.

Introduction

Screwworm (*Chrysomya bezziana*) infection recorded in Iraq 9/9/199 in Baghdad and never present before this time, Al-Aney (1997). then this infection distributed all over the middle of Iraq. For example in DIALA 12/9/1996. Nothing noticed in north and south Iraq. Spradbery et al (1992). In the region of Arabian Gulf firstly recorded during 1997 due to importation of sheep from Australia to Bahrain (FAO 1990). Some of this sheep exported to the Sultanate of Oman and United Arab Emirates (Spradbery and Khaufar 1992). Al-Azzazy (1989) emphasized on incidence of the old word screwworm infection in Saudi Arabia. Distribution of screwworm infection in north Africa were recorded also in Libya, but the species of this fly were different (*Chrysomya hominivorax*) the infection was

concentrated in cattle (Gabag et al 1989). Allwood and Bainbridge (1981) pointed to distribution of *Ch. bezziana* in Australia, India and east and south of Asia. Subramanian et al (1980) noticed the life cycle of screwworm fly of new world have a relation with climate. There is a seasonal variation correlated with the incidence of the infection. These infections were reported in between October and May. High percent of infection were recorded in January, February and March. Were in Al-Qadisiya one of them ear infection and the other in tonsils of idiot man. He is a month breather during sleeping there are four cases recorded, in Hilla city. One of them, the infection occurred on the back of the neck (Fig. 1). Others three, one of them knee joint and two were ear infection.

Materials and Methods

All of animal cases of screwworm infection recorded and examined in Al-Qadisiya vet. medicine college and in vet. Hospital of Diwaniya and Babylon during a period from April 1997-April 1998. Infection animals included sheep, cattle, goats, dogs, buffalo, horses and camels. Some cases of human infection were noticed in both governorates (Al-Qadisiya and Babylon). Temperature and Humidity were followed for the same period of research (one year) to study the relation between the incidence of infection with temperature and humidity.

Distribution in animals

From April 1997 to April 1998 number of animal cases were recorded in Babylon

was 15890 while in Al-Qadisiya the number of animal cases were 2032. the highest percent were in sheep (93.3%). The lowest percent were in horses (1.29%). Most of infected cases which were examined. The fly attack wounds even very small wounds that occurred by spines of plants in soft skin such as tail of sheep (Fig 2) on near the sexual opening after parturition (Fig 3) or attack cars of animals and man. Table (1,2)

Seasonal variations

There is seasonal variation in incidence of screwworm infection most cases in early winter, in Al-Qadisiya 36% of cases in October and increased gradually in November 40.2% and highest percent was

in December 54% while in Babylon the highest percent was in November 48.5% then decreased gradually until the hot months, it reached to zero during July and August.

Distribution in human

Human being was susceptible to infection by *Ch. bezziana* as in animals .There are six cases were recorded during one year in both Governorate. Tow of these cases in AL-Qadisyah then the other in Babylon .

No references are available on screwworm infection in animal and man in Iraq till 1996, because there was no cases during this year 1996 the incidences and distribution of infection in several cities of middle and south of Iraq were recorded the distribution of infection in animal was in Babylon more than AL-Qadisyah (15890 and 2032 cases respectively). This is due to variations in temperature and humidity . Babylon the climate is suitable for the infection ,beside the forest of date palm is very dense more than in AL-Qadisyah .*Ch. bezziana* is a parasite not have specific intermediate host but part of its life cycle (larval stages) parasitized on the wounds of hot blooded animals (about one week) in our research ,noticed fly lay its eggs at the margin of the wounds and the eggs hatched to small larvae resemble the screw and

Temperature and Humidity

There is a relation between temperature ,humidity with infection of this parasite .High incidence of this infection occurred in the winter time when the temperature was very low and the humidity was high percent .When the temperature was below 20c and the humidity was more than 60% during December while the infection was about 80% .During hot and dry months (45c,28% July) the infection were nearly disappear (Fig 4).table (3,4)

Discussion

very aggressive . These larvae are growing on living tissue ,and hidden in the animal due to bad weather (cooled) until it pupate when it fall down to the ground . Sporadic cases in human were recorded especially in a poor society . Zumpt (1965), Humphry *et al* (1980) and Walker(1922)studied pathological changes and cutaneous mayiasis in animals. Some of experiments were done on the growing of screwworm larvae of new world on blood (Elwear and Elowni,1991). These experiments were carried out in different temperatures (5,15,18,20,37,40) and they proved that the larvae were moulted to pupae in 18c ,20c and 37c but 100% were moulted in 20c .Tarry(1980) studies the effect of temperature ,wind sun light and rain on the incidence of the infection of warble fly.

Fig(1). Sheep infected with screwworm at the lower surface of the tail.Brownish exudates is present with many of the larvae.

Fig(2). Cow infected with serewworm at the margin of the Lip of vulvae post-parturition. Ulceration ,Swelling and Hemorrhage can be noticed. Some larvae are present milk color

Fig(3). Show the lesion occur by the infection of screwworm on the back of the neck of child five years old

Table (1). Screwworm fly infection in Al-Qadisiya province from 1997-1998 in different animals .

Animals									month
%	total	horses	donkeys	dogs	buffalo	goat	cattle	sheep	
0.05	١	-----	-----	-----	-----	-----	١	-----	٩٧ May
0.098	٢	-----	-----	-----	-----	١	١	-----	June
٠	٠	-----	-----	-----	-----	-----	-----	-----	July
٠	٠	-----	-----	-----	-----	-----	-----	-----	August
0.295	٦	-----	-----	-----	-----	١	-----	٥	Septmber
3.59	٧٣	-----	١	١	١	٢	٦	٦١	October
40.2	٨١٨	١	٢	٥	٢	٣	٣٥	٧٦٩	November
54.8	١١١٤	-----	١	١	٣	١٧	٤٧	١٠٤٥	December
0.935	١٩	-----	-----	-----	-----	-----	٤	١٥	٩٨/January
٠	٠	-----	-----	-----	-----	-----	-----	-----	February
0.05	١	-----	-----	-----	-----	-----	-----	١	March
0	٠	-----	-----	-----	-----	-----	-----	-----	April
	٢٠٣٢	١	٤	٧	٦	٢٤	٩٤	١٨٩٦	Total
100		0.05	0.196	0.39	0.29	1.18	4.6	93.3	%

Totale (2). Screwworm fly infection from 1997- 1998 in different animals of Babylon province.

Animals										month
%	Total	deer	camel	dogs	donkeys	buffalo	cattle	goat	sheep	
0.15	٢٥	-----	-----	-----	-----	-----	٥	٢	١٨	٩٧ May
0.3	٤٩	-----	-----	٤	٣	٧	١٠	٣	٢٢	June
0.15	٢٥	-----	-----	-----	-----	-----	٦	١	١٨	July
0.79	١٢٧	---	--	١	٣	١	٤٣	٦	٧٣	August
1.97	٣١٤	--	١	٦	٧	١	١٣١	٤	١٦٤	Septmber
14.6	٢٣٢٠	--	٨	٣٤	١٤	٦	٦٣٢	١٧	١٦٠٩	October
٥٢٤٨	٧٧١٦	١	٢	٥٧	٤٥	٩	٩٦٣	٣٤	٦٦٠٥	November
29.96	٤٧٦١	---	---	٢٥	١٣	٣	٧٢٨	٨	٣٩٨٤	December
2.8	٤٥٢	---	---	---	٣	٥	٦٤	١	٣٧٩	٩٨ /January
0.45	٧٣	-----	-----	-----	---	---	٥٠	---	٢٣	February
0.15	٢٥	-----	---	٣	---	---	٨	١	١٣	March
0.01	٣	-----	-----	١	-----	-----	-----	-----	٢	April
	١٥٨٩٠	١	١١	١٣١	٨٨	٣٢	٢٩٤٠	٧٧	١٢٩١٠	Total
100		0.006	0.06	0.89	0.55	0.20	16.61	0.48	81.24	%

Table(3). Relation between temperature humidity and percent of infection of Al-Qadisiya province

No.of infection	Humidity	Mean	High temp.	Low tmp.	Month
1	34.4	38.8	45	29.6	٩٧ May
٢	28.9	43.5	48.5	36	June
٠	٢٩	43.5	46.5	40.6	July
0	23.2	41.2	45.2	38.7	August
٦	35.3	40.6	47.7	34.5	Sptember
72	49.7	33.6	40.2	٢٣	October
٨١٧	72.2	24.3	28.4	13.3	November
١١١٤	81.6	17.8	٢٣	12.5	December
١٩	81.2	14.8	20.2	8.2	٩٨/ January
٠	٧٢	19.5	24.8	١٠	February
١	62.5	22.8	٩٢٧	13.4	March
٠	٤١	32.3	٣٥	١٥	April

Table (4). Relation of temperature humidity and percent of infection in Babylon province

No.of infection	Humidity	Mean	High temp.	Low tmp.	Month
٢٥	26.2	38.5	44.9	28.7	٩٧ May
٤٩	34.4	42.9	47.9	35.6	June
٤٥	34.1	٤٣	٤٦	40.4	July
١٢٧	38.5	40.9	45.3	38.3	August
314	40.6	39.1	45.2	29.2	Sptember
2320	56.8	33	27.9	22.5	October
7716	79.3	٢٤	29	13.8	November
٤٧٥١	80.6	16.8	٢٠	12.1	December
٤٥٢	٨٣	14.6	٢٠	8	٩٨/ January
٧٣	٧٠	18.6	٢٤	١٠	February
٢٥	٦٧	22.6	26.9	12.4	March
٣	٥٢	31.9	٣٤	14	April

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دراسة في وبائية اصابة الذبابة الحلزونية في محافظتي بابل والقادسية

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الخلاصة

استمرت دراسة اصابة الذبابة الحلزونية في محافظتي بابل والقادسية لمدة سنة كاملة. خلال هذه الفترة تم تسجيل اعداد الحيوانات المصابة وكانت ١٥٨٩٠ في بابل و ٢٠٣٢ في القادسية. نسبة الاصابة في الاغنام كانت اعلى في كلا المحافظتين من بقية الحيوانات ، ٩٣% بينما اوطأ نسبة كانت في الخيول 1.29%. درجة الحرارة والرطوبة وعلاقتهما بنسبة حدوث الاصابة خلال فترة الدراسة ، تم تسجيلها وعلى مدار اشهر السنة وقد اظهرت النتائج ان درجة الحرارة والرطوبة الواطئة للمناخ عم زيادة نسبة الرطوبة له علاقة مباشرة في زيادة نسبة الاصابة. بينما على العكس الارتفاع درجة الحرارة للجو وانخفاض نسبة الرطوبة تنقص نسبة الاصابة او تنعدم كما في شهر تموز، الانتشار في الانسان كان محدودا جدا وهنالك حالات فردية قد تم تسجيلها خلال فترة البحث ايضا.