DETECTION OF NASAL BOT FLY LARVAE IN SLAUGHTERED SHEEP OF NINEVAH GOVERNORATE – IRAQ


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(Received14 September 2017 ,Accepted 15 October 2017)

Keywords: Nasal bot fly,Oestrus ovis, Larvae.

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ABSTRACT

This study aimed to defect and calculate infection rate of Oestrus ovis. in sheep from Ninevah governorate, Iraq. The study examines the presence of oestrus ovis. Larvae in heads sheep collected from march to may 2014. Of 133 heads 72 (54.1%) were infested with oestrus ovis. A total of 142 larvae were encountered in the infested sheep. Thirty five (24.6%) of those larvae were identified as L1, 62 (43.7%) were identified as L2 and 45 (31.7%) were identified as L3, the general mean of intensity of larvae was( 2) larvae/ infested head. The older animals were mostly affected as compared to younger animals. there was no significant difference between the number of infected male and female. sheep with black colored head higher infestation than that of sheep with light colored head

INTRODUCTION

Oestrosis is a wide spread myiasis which may severely impair the health of small ruminant (1). The development of larvae in the nasal sinus cavities can cause severe clinical signs such as breathing difficulties nasal discharge, Muco- purulent myiasis of nasal passages and frontal sinuses, emaciation frequent sneezing and dyspnea (2). The larvae irritate the mucosa with their oral hooks and ventral spaines erosion of the bones of the skull together with the annoyance caused by the adult flies (3). When the adult fly attacks the sheep to deposit larvae. the animal stop feeding and become restless moreover they shake their heads or press their noses against the
ground or in between other sheep (4). These clinical signs cause considerable economic losses in small ruminant livestock.

*O. ovis* larvae caused about 4.6kg of meat loss, 200-500g of wool loss and 10% milk loss per animal (5) Oestrosis is also considered as zoonotic disease it sometimes causes ophtalmomyiasis in humans in different regions of the world (6). Although oestrosis is very harmful to sheep, few studies had been conducted about its prevalence in Iraq.. therefore the study were aimed to implement and update information regarding on the infection rate of *O. Ovis* in Ninevah governorate

**MATERIALS AND METHODS**

A total of 133 sheep head belonging to 81 male and 52 female were examined for *O. ovis* myiasis. Sheep heads were collected from March to May 2014 and only animals originating from Ninevah governorate were examined in the study. Sex, age and colors of the head animals were recorded. Information of sex were obtained from the butchers and confirmed by head curvature and horns (ewes being mainly hornless). Aging was estimated by dentition. The heads were hand-sawn vertically through the nasal cavities using forceps and pein knife to expose the nasal cavities turbinate bones and frontal sinuses (7, 8) With the aid of hand lens and a pair of hand forceps. The number of larvae was identified recovered per head was recorded washed with physiological saline solution and was kept in 70% alcohol solution and examined as described by zumpts (9). Chi-squar test was used for statistical analysis of the results (10)

**RESULTS**

Out of the 133 heads examined 72 (54.1%) were infested with *O. ovis*, all three larval instars were observed in both sex. All age were infested with *O. ovis*. the general mean of intensity of larvae was (2) larvae per infested head. Of the total of 142 larvae (24.6%) was L1 while L2 and L3 represented 43.7% and 31.7% Table (1) figure (1, 2). The infestation percentage according to the ages of animals were are given in Table 2. Although Oestrosis was more prevalent in sheep older than three years old (58.5%) There was a significant difference for infestation rates regarding the ages of animals (p<0.05).

Of these, 72 heads belonging to 45 male and 27 female were positive for the infection which gave a infection rate of 55.6 and 51.9 respectively and there was no
significant difference between the number of infected male and female. The larvae were more common in animals with dark colored heads especially the animals with black heads and black noses had infestation and this was statistically significant (p<0.05) table(3).

<table>
<thead>
<tr>
<th>Number of head examined</th>
<th>Number of head infested</th>
<th>Infection rate (%)</th>
<th>Number of larvae</th>
<th>Mean larval burden</th>
<th>Larval stages(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L1(%) L2(%) L3(%)</td>
</tr>
<tr>
<td>133</td>
<td>72</td>
<td>54.1</td>
<td>142</td>
<td>2</td>
<td>35(24.6) 62(43.7) 45(31.7)</td>
</tr>
</tbody>
</table>

Table1: Numbers of sheep infested with *Oestrus ovis* and its larval stages

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No. examined</th>
<th>No. Infected</th>
<th>Infection rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1≤</td>
<td>13</td>
<td>3</td>
<td>23.1&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>2</td>
<td>55</td>
<td>31</td>
<td>56.4&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>≥3</td>
<td>65</td>
<td>38</td>
<td>58.5&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>TOTAL</td>
<td>133</td>
<td>72</td>
<td>54.1</td>
</tr>
</tbody>
</table>

* A different letters in column are significantly different (p<0.05)

<table>
<thead>
<tr>
<th>The color of head</th>
<th>No. Examined</th>
<th>No. infected</th>
<th>Infection rate(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>20</td>
<td>13</td>
<td>65&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Red</td>
<td>40</td>
<td>22</td>
<td>55&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>White</td>
<td>10</td>
<td>2</td>
<td>20&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Black spotted</td>
<td>40</td>
<td>23</td>
<td>57.5&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Red spotted</td>
<td>23</td>
<td>12</td>
<td>52.2&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
<td>72</td>
<td>54.1</td>
</tr>
</tbody>
</table>

* A different letters in column are significantly different (p<0.05)
Fig 1: A sagittal section sheep head shows various larval stages bot fly in the nasal cavity

Fig 2: The larval instars of the sheep bot fly
DISCUSSION

In Iraq the infestation rates *Oestrus ovis* larvae are 17.2% in Ninevah governorate (11), 33.4% in Baghdad (12) and (68%) in Erbil (13). While the infestation of sheep with nasal bot fly *oestrus ovis* of current study was (54.1%) The variation in the infestation rates in Iraq may be due to difference method of head examined. in the previous studies (11,12,13) the head was examined by hitting the heads on the ground several times but in the current study the head examined by open the heads by hand sawn vertically through the nasal cavities and differences in the climate of the regions of Iraq.

The prevalence of *O.ovis* infestation (54.1) in this study was also lower than those reported in similar studies carried out in other countries such as konya region of turkey where 59% of sheep was infested with *O.ovis* larvae (14) and northern Jordan with 58% of prevalence (15) However the prevalence of *o.ovis* infestation in the current study was higher than those reported in similar studies carried out in other countries such as Nigde city from turkey (22.52%) of sheep was infested with *O.ovis* larvae (16) or Kars region from Turkey with 40.3% of prevalence (17) Egyptian with (11.49%) (18) Saudia Arabia with (5.5%) (19) and Lybia with (42.33%) (20).

This finding may be attributed to the fact that various factors such as differences in geographical location, environmental factors climatic conditions animal breed type of animal rearing and husbandry the experimental design and the methods followed in each study.

A total of the 133 heads examined, 142 larvae were collected. The present study showed that the mean of intensity of 2 larvae per infested head was higher than those recorded in sudan with 1.4 (21) but was lower than those recorded in Kars with (4.5) (17) Nigde city in Turkey with 5.78 (16) Iran with 6.3 (22) and Etheopia with 6.8 (23) This difference might be due to the differences in the climate of the regions. Concerning the risk factors of oestrosis such as age The sheep older than 3 years were more infested than any other age group because older sheep more attractive to female flies than younger animals by increasing opportunites of exposure to fly strike immuno suppression which increased prevalence with age. This finding is in agreement with previous studies (1,15,17,20,22,24) in which the sheep older than 3 years were more infested however this finding disagreement with previous studies (16,18) in which younger sheep were more infested.
Sheep with black colored head had higher infestation rate than that of sheep with white colored head because the flies of *Oestrus ovis* has attraction to black colored animals and higher probability of acquiring the disease(17,25)

**CONCLUSION**

*Oestrus ovis* infection is present in ninevah governorate with a high presenting, all of larval stages are recorded. The infection affected both sexes but affected a higher percentage of older aged sheep. The head color could be considered as a risk factor of the disease. This study status implied that animals have to be treated frequently all the year round in order to reduce the prevalence, clinical signs economic losses.

**REFERENCE**


