OESTRUS OVIS INFESTATION IN SHEEP OF SEMI-ARID ZONE OF NIGERIA

A.A. Biu and C.O. Nwosu
Department of Veterinary Microbiology & Parasitology,
Faculty of Veterinary Medicine, University of Maiduguri, Maiduguri, P.M.B. 1069, Nigeria

ABSTRACT

Investigations carried out on the incidence of *Oestrus ovis* in Maiduguri, Nigeria revealed that 62.5% of the 4002 sheep heads were parasitised. Adult sheep infestation rate was (88.1%) significantly ($P < 0.05$) higher than young sheep (43.5%). Infestation rates were also significantly ($P < 0.05$) higher (83.6%) in female than male (37.8%) sheep. All instars of the larvae were encountered throughout the year. The peaks of 1st, 2nd and 3rd stage larvae infestation were recorded during the month of September while the lowest levels were recorded in May.

INTRODUCTION

The sheep nasal bot fly *Oestrus ovis* is widely distributed in most tropical countries affecting a large number of sheep (Abul-Hab, 1970; Kettle, 1973; Rogers and Knapp, 1973; Soulsby, 1982; Chiezey, 1988; Bekele and Mukasa-Mugerwa, 1994) and sometimes man especially shepherds who may be affected.

The presence of larvae called nasal bots deposited round the nostrils is detrimental to the health of infested animals (Horak, 1977) especially in heavy infestations where these invade the nasal passages to cause nasal myiasis. These wander in the nostrils feeding on mucous and change from one instar into another and may migrate to the frontal and maxillary sinuses resulting into nasal discharge, sneezing, unthriftiness, incoordination often termed "falsegid" and if larvae die in the sinuses there may be secondary bacterial invasion and cerebral involvement (Urquhart *et al.*, 1992). Nasal bots are also known to predispose the host to other maladies of the respiratory system such as septic ovine pneumonia with larvae being found in the bronchi, bronchioles, lungs and trachea (Gupta *et al.*, 1985; Chiezey 1988; Bekele and Mukasa-Mugerwa, 1994) and pleuropneumonia in goats (Ranatunga and Rajamahendran, 1972). The 3rd instars crawl out and leave the nostrils, pupate on the ground to emerge as adult flies.

Horak (1977) and Pandey (1989) reported prevalence of 48.8, 73.4 and 65.2% in Chad, South Africa and Zimbabwe, respectively. Bekele *et al.* (1992) found nasal myiasis to be a secondary cause of mortality and associated with circling disease in Ethiopian sheep.

Recently, livestock farmers in Nigeria are showing interest in intensive sheep-rearing and so it is important that they should be aware of the concomitant parasites which may possibly affect flocks reared under intensive management systems. Information on the incidence and biology of *Oestrus ovis* is lacking in the Sudan Savannah region of Nigeria. This paucity of information increased with the high production of sheep in this area. This study was carried out to prefer strategies to be adopted in the control of *Oestrus ovis* infestation.

MATERIALS AND METHODS

Investigations into the incidence of *Oestrus ovis* infestation in 4002 sheep slaughtered in Maiduguri abattoir between November 1995 and October 1996 was carried out. Presence or absence of clinical signs of infestation were recorded individually for each sheep. The number and length of larvae collected from each sheep was recorded.

Data collected were analysed statistically using the student paired t-test (Compel, 1986).

RESULTS

The results of this study revealed that out of 4002 sheep heads examined in Maiduguri Metropolitan abattoir during the study period, 62.5% were parasitised by *Oestrus ovis* larvae (Table 1). The infestation rate was significantly ($P < 0.05$) higher among adult sheep (88.1%) than younger ones (43.5%). Table 1 also shows that infestation rates were significantly ($P < 0.05\%$) higher in females (83.6%) than males (37.8%) examined

and Balami breed of sheep also showed significantly ($P<0.05$) higher incidence (88%) of infestation than the other breeds encountered in this area.

The monthly incidence of infestation with *O. ovis* larvae shown in Table 2 indicates that the month of October has the highest peak of infestation (87.3%) followed by July and November with 75.1 and 73.3%, respectively while the month of February, has the lowest peak incidence (50%) of infestation.

Table 3 shows the stage-wise larval distribution for *O. ovis* with incidence of 40.8, 47 and 12.2% for lst, 2nd and 3rd stage instars, respectively for sheep with peak levels in September and lowest levels in May.

Table 2: Monthly incidence of infestation with *Oestrus ovis* larvae in sheep examined at Maiduguri abattoir.

Month	N	Animals infested	
		Number	Percent
November	300	220	73.3
December	280	180	64.3
January	380	200	52.6
February	400	200	50.0
March	350	210	60.0
April	360	190	52.8
May	270	140	51.9
June	280	160	57.1
July	400	300	75.0
August	370	230	62.2
September	360	250	69.4
October	250	220	88.0

Table 1: Incidence of *Oestrus ovis* larvae infestation according to age, sex and breed of sheep examined at Maiduguri.

	Total animals Examined	No (%) Animal infested	Total No. of larvae Recorded	$P<0.05$
All animals	4002	2500 (62.5)	5558	-
Age				
Young	2300	1000 (43.5)	2058	$P<0.05$
Adult	1702	1500 (88.1)	3500	
Sex				
Male	1850	700 (37.8)	1700	$P<0.05$
Female	2152	1800 (83.6)	3858	
Breed				
Balami	1000	880 (88.0)	1852	
Uda	980	420 (42.9)	1106	$P<0.05$
Yankassa	2022	1200 (59.4)	2600	

Table 3: Monthly distribution of different larval stages in sheep.

Month	Total no. of larvae recorded stagewise in sheep			Total No. of All Stages recorded	Mean No. of recovered per animal
	lst	2nd	3rd		
November	190	240	30	460	2.1
December	100	220	40	360	2.0
January	140	300	80	520	2.6
February	160	230	110	500	2.6
March	170	280	10	460	2.2
April	140	180	80	400	2.1
May	100	150	50	300	2.1
June	140	160	40	340	2.1
July	300	250	80	630	2.1
August	320	160	40	520	2.3
September	310	208	90	608	2.4
October	195	235	30	460	2.1
Total	2265 (40.8%)	2613 (47.0%)	680 (12.2%)	5558	2.2

DISCUSSION

A large proportion of sheep in this study are raised mainly as free rangers, thus these animals can easily be infested by the nasal bot as the adult flies are common. Adults showed a higher infestation rate compared to the younger sheep. This agrees with the observations made by Meleney *et al.* (1962), Horak (1977) and Gupta *et al.* (1985) who suggested that young animals are probably agile enough to avoid deposits of larvae by the questing botfly.

In contrast to reports by Gupta *et al.* (1985) female sheep showed a higher infestation rate than male sheep. This finding may probably be due to the fact that greater number of female sheep are usually slaughtered for public consumption in this area.

Breed rates showed Balami breed of sheep to have the highest infestation rates as they generally possess wider nostrils than the other breeds.

Peak incidence of infestation was observed between October and November during this study which agrees with the earlier observations by Horak (1977), Pandey (1989) and Bekele and Mukasa-Mugerwa (1994). While lower incidence was observed between February and May which varies with the findings of Njoku *et al.* (1978) who observed peak incidence in Zaria during the month of February. This can be attributed to the differences in climatic and other unknown factors.

All larval instars were recovered throughout the year with peak incidence in September while the lowest level occurred in April. Similar observations have been reported by Horak (1977), Pandey (1989) and Bekele *et al.* (1992) who suggested that most farmers treat with larvicidies between February and April.

The results of this study have shown that the nasal botfly infestation in sheep in the arid zone is a common feature. For a profitable sheep production, therefore, a chemo-prophylactic cover may be essential in order to minimise weight loss and decrease productivity due to nasal bot fly infestation.

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