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SURVEY OF LOUSE INFESTATION AMONGST SHEEP AND GOATS IN MAIDUGURI NIGERIA

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ABSTRACT

Lice infestation amongst livestock, also known as lousiness is highly prevalent in Nigeria accounting for about 30% loss in sheep and goats production. A survey on the incidence of louse infestation amongst sheep and goats was conducted in Maiduguri, Nigeria. A total of 240 sheep and goats were examined revealing an overall incidence of 34(14.2%) comprising of 127 sheep and 113 goats examined with incidence rates of 28 (22%) and 6 (5.3%) respectively ($p<0.05$). Two species of louse were identified namely *Damalina ovis* and *Linognathus africanus* on sheep with incidence rates of 22 (78.6%) and 6 (21.4%) respectively ($p< 0.05$). On goats were *Damalina caprae* and *Linognathus stenopsis* with incidence rates of 2 (33.3%) and 4 (66.7%) respectively ($p<0.05$). Based on sex, male and female sheep had incidence rates of 18 (64.3%) and 10 (35.7%) ($p<0.05$), while male and female goats had 5 (83.3%) and 1(16.7%) ($p<0.05$) respectively. Age wise, young and adult sheep had incidence rates of 22 (78.6%) and 6 (21.4%) ($p<0.05$), while young and adult goats had 4(66.7%) and 2(33.3%) ($p>0.05$) respectively. The University of Maiduguri Animal farm (UMAF) had a significantly ($p<0.05$) lower incidence rates for both sheep 6 (21.4%) and goats, (16.7%) compared with the Metropolitan livestock market with 22 (78.6%) and 5 (83.3%) for sheep and goats respectively. Conclusively, lousiness amongst sheep and goats is in Maiduguri, as such adequate veterinary attention is indicated for their enhanced production.

Keywords: Survey, Lousiness, Sheep, Goats, Maiduguri, Nigeria

Introduction

About 5,000 known species of lice parasitize wild birds and mammals feeding on blood (sucking lice), skin, hair or feathers (chewing lice) of a lost. They are host specific, and are found in all zoogeographical regions, but most common in the tropics (Philim, 2003). Lice infestation on livestock is also known as lousiness, and is highly prevalent in Nigeria accounting for about 30% production losses in

sheep and goats (George *et al,* 1992; Yanan and Mohammed, 2001; Uttah *et al,* 2012). Lousiness have been reported to cause poor feed efficiency, lower weight gains, decreased meat and milk production, damage to hides and skin, anaemia and unthriftness (Byford, *et al*, 1992; Andrew, 2001; Uttah, *et al*, 2012; Gharbi *et al*, 2013). There is a dearth of information on the incidence of lice on small on small ruminant in north eastern Nigeria, hence the need for this study.

Materials and Methods

Lice were collected from a total of 240 sheep and goats from both the University of Maiduguri animal farm and the Metropolitan livestock market over a period of three months between January and March 2010. Bodies of sheep and goats were thoroughly brushed using a fine tip brushed onto a white enamel tray combined with hand picking and hair parting to collect lice. Lice were collected into clean universal bottles with 2% formalin as a preservative, brought to the veterinary parasitology laboratory, University of Maiduguri were they were mounted using polyvinyl alcohol onto a clean glass slide under a cover slip and observed under the stereoscopic microscope and identified based on the shape of head, antenna, maxillary pulps, tarsi, claws, presence and absence paratergal plates and setae as described by Zangana *et. al.*, (2013).

Results

Table 1 shows the incidence of lice infestation on sheep and goats examined. On sheep, species isolated were *Damalina ovis* and *Linognathus africanus* with incidence rates of 22(78.6%) and 06 (21.4%) ($p<0.05$), and goats were *Damalina caprae* and *Linognathus stenopsis* with incidence rates of 02(33.3%) and 04(66.7%)($p>0.05$) respectively. Table 2 shows the incidence of lice infestation on sheep and goats based on their sex, age and area of study. Male sheep 18 (64.3%) and goats 5 (83.3%) were significantly ($p<0.05$) more infested than female sheep 10 (35.7%) and goats 1 (16.7%). Young sheep 22(78.6%) and goats 4 (66.7%) were also significantly ($p<0.05$) more infested than adult sheep 6 (21.4%) and goats 2(33.3%). Based on study site, the University of Maiduguri animal farm had a significantly lower ($p<0.05$) incidence for sheep 6(21.4%) and goats 1 (16.7%) compared with the Metropolitan livestock market which had 22 (78.6%) for sheep and 5 (83.3%) for goats.

Table 1: Incidence of lice infestation on sheep and goats in Maiduguri

Louse species	No. (%) infested
Sheep (n=28):	
Damalina ovis	22(78.6)
Linognathus africanus	06(21.4)
Total	28/127 (22.0)
Goats (n=6):	
Damalina caprae	02(33.3)
Linognathus stenopsis	04(66.7)
Total	**6/113(5.3)**

Table 2: Incidence of lice infestation on sheep and goats based on their sex, age and study site

	No (%) infested	
	Sheep (n=28)	Goats (n=6)
Sex:		
Male	18(64.3)	5(83.3)
Female	10(35.7)	1(16.7)
Age:		
Young< 6months	22(78.6)	4(66.7)
Adult > 6months	6(21.4)	2(33.3)
Study area:		
University farm	6(21.4)	1(16.7)
Metropolitan livestock	22(78.6)	5(83.3)
Total	28(22.0)	6(5.3)

NB: Number of sheep examined = 127
Number of goats examined = 113

Discussion

This study has revealed an overall incidence of 22% and 5.3% for lousiness on sheep and goats respectively with 2 dominant lice species as *Damalina* and *Linognathus*. Similar reports were made by Yanan and Mohammed (2001) that lice infestation by these species in sheep and goats is prevalent in large areas of Nigeria, and confirmed by George, *et.al.*, (1992) in Zaria in northern Nigeria, and

Uttah *et. al.*, (2012) in Odukpami and Calabar areas of Cross Rivers State of southern Nigeria. It also agrees with Sarkar *et. al.,* (2010) in Bangladesh and Zangana *et. al.*, (2013) in northern Iraq. Male and young sheep and goats were significantly more infested than their adult and female counterparts in this study. This agrees with Byford *et. al.*, (1992); Yanan and Mohammed, (2001); James *et. al.*, (2007) and Gharbi *et. al.*,(2001) who indicated that sometimes animal pens are never cleaned, and adult animals show efficient grooming behavior than younger ones. However, it contradicts Lloyd, (1983) and Sarkar *et. al.*, (2010) that females are more infested than males due to hormonal influences, as higher levels of prolactin and progesterone could make females more susceptible to any infection. Also stress production such as pregnancy and lactation increase susceptibility of sheep goats to lousiness. Sheep and goats on the University of Maiduguri animal farm had lower incidence of lice infestation than the Metropolitan livestock market. This could be due to poor levels of management as proffered by Uttah *et. al.*, (2012) who explained that risk factors such as over crowdedness which enhances direct prolonged and sustained bodily contact, absence of veterinary regulations for livestock movement across borders, as most sheep and goats herders in this study area are nomadic, poor awareness of farmers and possible resistance to chemical acaroids are significant in perpetuating lice infestations.

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