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Full Length Research Paper

The relationship between sex and age of buffalo's infestation with ectoparasites in Sohag Governorate, Egypt

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During the present survey, 45 buffaloes were inspected for ectoparasites infestation, among them 40 buffaloes were found infested with two species of ectoparasites. The buffaloes were infested by *Haematopinus tuberculatus* presented an infestation rate of 66.67% but *Sarcoptes* sp., was recorded in 33.33% of the buffaloes. The relationship between the sex of the animals and the ectoparasites infestation were also determined. Thirty females and 5 males were infestated by *H. tuberculatus*, while 4 females and 1 male were infestated by *Sarcoptes* sp. The relationship between the age of buffaloes and the different species of ectoparasites infestation was also studied. In this case 100% of the young animals were infestated by *H. tuberculatus* compared with 93.33% in claves, so a lower infested population was recorded in adult animal. On the other hand only 20% of the young population was infestated by *Sarcoptes* sp., compared with 6.67% in claves and adult animal.

Key words: Claves, ectoparasites, *Haematopinus tuberculatus, Sarcoptes* sp.

INTRODUCTION

Ectoparasites including lice, ticks, mites etc. play an important role in the transmission of certain pathogens (Loomis, 1986) but unfortunately they have not attracted proper attention of the veterinarians of our country. The ectoparasites are known to cause heavy economic losses to livestock industry due to their usual habit of blood sucking, which adversely affects the economic production (Fujusaki et al., 1993; Branscheid & Schroer, 1997). As a result, they may cause direct damage to skin and other sub-cutaneous tissues. When present at high intensities, ectoparasites may cause indirect harms, causing disturbance, increasing levels of prejudicial behaviors such as rubbing, leading to reduced time on grazing or ruminating and, self-wounding (Weeks et al., 1995).

The ectoparasites have a major effect on the husbandry and productivity of livestock, weight gain **(**Gibney et al., 1985; Devaney et al., 1992) milk production and quality of hide (Coles et al., 2003). They can cause harm due to their blood feeding activities and can transmit many pathogenic organisms (Geden et al., 1990; Watson et al., 1997; Milnes and Green, 1999; Nafstad and Gronstol, 2001; Colwell and Himsl- Rayner, 2002). The present study was conducted to investigate the overall prevalence of ectoparasites and its relationship with sex and age in buffaloes kept at a private buffalo farm.

MATERIALS AND METHODS

The present study was collected the ectoparasites on buffaloes from different areas in El-Monshah district, Sohag Governorate during the year of 2013. The people`s house and the animal sheds were in the same

Table 1. The overall prevalence of ectoparasites in buffaloes.

Name of parasite	Number of inspected animals	No. Of infested animals	Infestation (%)
H. tuberculatus	45	35	66.67
Sarcoptes sp.		5	33.33
G. Total		40	100

Table 2. The relationship between sex of buffaloes and ectoparasites infestation.

Name of parasite	No. of female animals			No. of male animals		
	Examined	Infested	Infestation (%)	Examined	Infested	Infestation (%)
H. tuberculatus.	34 (85%)	30	88.24	6(15%)	5	83.33
Sarcoptes sp.,		4	11.76		1	16.67

Table 3. The relationship between age of buffloes and ectoparasites infestation.

Name of parasite	No. of animals examined	Age (year) groups of the buffaloes		
		0.5-2 (claves) (n=15)	2-4 (young) (n=15)	>4 (adult) (n=15)
H. tuberculatus	45	14 (93.33%)	15(100)	6(40%)
Sarcoptes sp.		1(6.67%)	3(20%)	1(6.67%)

building. The male and female buffaloes were randomly selected on these buildings. The age of the buffaloes were 6 months and above as it follows: group (1) 0.5-2 years (claves); group (2) 2-4 years (young) and group - (3) >4 years (adult), each group contained 15 individuals. Samples were collected from different parts of the body of the individual buffalo by hand picking, small camel hair brush dipped in plastic tubes containing 70% ethyl alcohol and labeled with necessary information was used for the collection. The ectoparasites were classified as lice and mites. From the whole fauna in the sample, mites were isolated in small vials using a Camel's hair brush to avoid destruction and counted using stereoscopic binocular microscope. Clearing of collected specimens was done using lactic acid. Mites were mounted in Hoyer's media and left to dry by using a hot plate and prepared for microscopic examination. Identification of mites was done using different keys.

RESULTS AND DISCUSSION

This work was carried out to determine the population distribution of various ectoparasites on buffaloes sex and age. Data in Table 1 show the species of ectoparasites surveyed from buffaloes of Soahg Governorate during A three month period. The research work revealed that the buffaloes were very much susceptible to ectoparasitic infestation. About 88.89% buffaloes were found to be infested with two species of ectoparasites, of them prevalence of *H. tuberculatus* was the highest (66.67%) followed by *Sarcoptes* sp. (33.33%). This results agreement with Desokey (2011) found that the buffloes were infested by lice, mites in Assiut Governorate.

It was found that the prevalence of ectoparasites were higher in female buffaloes (85%) than male (15%) (Table 2). Female buffaloes were 5.67 times more susceptible to ectoparasities infestations than the male buffaloes. The relationship between sex of animal and ectoparasites infestation were also determined. Thirty females and 5 males were infestated by *H. tuberculatus*, while 4 females and 1 male were infestated by *Sarcoptes* sp. In both male and female groups, *H. tuberculatus* was the main pest. Although the exact cause of higher prevalence of ectoparasitic infestations in female buffaloes cannot be explained, it can be hypothesized that some hormonal influences may be associated with this phenomenon. Lloyd (1983) reported that higher level of prolactin and progesterone hormones make the individuals more susceptible to any infection. Moreover, stresses of production, such as, pregnancy and lactation make the female animals more susceptible to infection.

It was revealed that age of the host affects ectoparasitic infestation. Younger buffaloes were comparatively more susceptible (100%) than claves (93.33%) and adult animals (40%) by *H. tuberculatus* infestation (Table 3). But young buffalos were comparatively more susceptible (20%) than claves and

adult animals (6.67%) by *Sarcoptes sp.* infestation. It was observed that susceptibility decreased with the increase of age Islam (1989) reported that the highest prevalence of *H. tuberculatus* was (65.8%) in the groups with less than 2 years old, results supported by the present findings. This same study reported a prevalence of 17.07% of the *H. bispinosa* species on the younger animals (> 2 to 5 years). This finding is in agreement with the earlier reports of Islam (1989) who recorded highest (15.4%) prevalence of *H. bispinosa* in the buffaloes aged between 2-4 years. The present finding is in contrast with the earlier reports of Chowdhury (1992) who recorded the higher (60%) prevalence of *H. tuberculatus* in the young (2-4 years) whether highest (8%) prevalence of *H. bispinosa* was found in the calves (< 1 year).

Chowdhury (1992) also reported the higher (24%) prevalence of *B. microplus* in the buffaloes aged between 1-2 years which is much higher than the present findings. These variations among the present and previous studies might be due to the variation in the geographical locations of the study area, selection and collection of samples. It is very difficult to explain exactly the frequent occurrence of ectoparasitic infestation in calves, but it may be assumed that the less developed immune system of the calves may be responsible for the higher prevalence of ectoparasitic infestation. On the other hand, buffaloes developed immunity with the increase of age, so susceptibility decreased with the increase of age.

REFERENCES

Branscheid W, Schroer (1997). Damage to cattle hides, detection, frequency and economic importance. *Fleischwirtschaft*., 77:333–337

Chowdhury MWH (1992). External parasites of buffaloes in Mymensingh districts. MS thesis, Submitted to the Department of Parasitology, Faculty of Veterinary Science, Bangladesh Agricultural University, Mymensingh.

Coles GC, Hadley PJ, Milnes AS, Green LE, Stosic PJ, Garnsworthy PC (2003) . Relationship between lice infestation and leather damage in cattle. Vet. Rec., 153: 255–259.

Colwell DD, Himsl-Rayner C (2002). *Linognathus vituli* (Anoplura: Linognathidae).Population growth, dispersal and development of humoral immune responses in naive calves following induced infestation. Vet. Parasitol., 108: 237-246.

Desoky ASS (2011) Studies on Certain Ectoparasites Associated with Some Farm Animals and their Control, Ph.D. Thesis, Fac Agric Assiut Univ, Assiut, Egypt, p. 179

Devaney JA, Craig TM, Rowe LD, Wade C, Miller DK, (1992). Effects of low levels of lice and internal nematodes on weight gain and blood parameters in calves in central Texas. J. Econ. Entomol., 85: 144–149.

Fujusaki, K.; T. Kamio; S. Kawazn; S. Shimizu and K. Shimura (1993). Theleria sergenti experimental transmission by the long nosed cattle louse, *Linognathus vituli*. Ann. Trop. Med. Parasitol., 87: 217–18

Geden CJ, Rutz DA, Bishop DR (1990). Cattle lice (Anoplura, Mallophaga) in New York: seasonal population changes, effects of housing type on infestations of calves and sampling efficiency. J. Econ. Entomol., 83: 1435-1438.

Gibney VJ, Campbell JB, Boxler DJ, Clanton DC, Deutscher GH (1985). Effects of various infestation levels of cattle lice (Mallophaga: Trichodectidae and Anoplura: Haematopinidae) on feed efficiency and weight gain of beef heifers. J. Econ. Entomol., 78: 1304–1307.

Islam FMS (1989). Incidence of parasites of buffaloes in some areas of Bangladesh. MS thesis, Submitted to the Department of Parasitology, Bangladesh Agricultural University, Mymensingh.

Lloyd S (1983). Effect of pregnancy and lactation up on infection. Vet. Immunol. Immunopathol., 4: 153-176.

Loomis EC (1986). Ectoparasites of cattle. Vet. Clin. North Am.,, 2: 299–321

Milnes AS, Green LE (1999). Prevalence of lice on dairy cattle in England and the bordering countries of Wales. Res. Vet. Sci., 47: 497-510.

Nafstad O, Gronstol H (2001). Eradication of lice infestation. Acta. Vet. Scand., 42: 81-89.

Weeks CA, Nicol CJ, Titchener RN (1995). Effects of the sucking louse (*Linognathus vituli*) on the grooming behavior of housed calves. Vet. Rec., 137: 33–35.