International Journal of Biomedical and Health Sciences
Vol. 1, No. 1, March 31, 2005
Printed in Nigeria

IJBHS 2004034/1105

Prevalence of equine mange in Northern parts of Borno State, Nigeria

A. A. Biu*[1], D. K. Nwagbara[1] and M. Bukar[2]

[1]Department of Veterinary Microbiology and Parasitology, University of Maiduguri, Maiduguri, Nigeria
[2]Department of Veterinary Pathology, Faculty of Veterinary Medicine, P.O. Box 8136, University of Maiduguri, Maiduguri, Nigeria.

(Received November 25, 2004)

ABSTRACT: An investigation on the mange mites of 300 locally domesticated horses was conducted in five local government areas of northern Borno State comprising of Monguno, Marte, Kukawa, Guzamale and Nganzai using the deep scrapping method which revealed an overall prevalence of 9(3.0%). *Sarcoptes, Psoroptes* and *Chorioptes* species were found with prevalence rates of 4(44.4%), 2(22.2%) and 3(33.3%) respectively (P>0.05). Prevalence of mange mite infestation based on the sex and age of the horse indicated that out of the 9 infested horses 6(66.7%) were males while 3(33.3%) were females with the difference in prevalence not statistically significant (P>0.05). Also among the horses infested 7(77.8%) were adults while 2(22.2%) were young ones, however, the differences were not statistically significant (P>0.05). The prevalence of mange based on the predilection site revealed 4(44.4%), 2(22.2%), 2(22.2%) and 1(11.1%) prevalence for the saddle area, head, withers and leg respectively with differences in their prevalence statistically significant (P<0.05).

Key Words: Sarcoptic mange; Equine mange; Mange mites; Horses; Borno State; Nigeria.

Introduction

Mange mites are uncommon parasites of horses causing specific disease entity (Soulsby, 1982). Three types of mite infestation occur mostly in horses i.e. Sarcoptic mange by *Sarcoptes scabiei var. equi* as the most troublesome and injurious, Psoroptic mange by *Psoroptes equi*(the scab mite, Chorioptic mange by *Chorioptes equi* which is the most prevalent and limited to the lower limbs (Edward, 1992).

Other species of mites such as *Psorroptes ovis* and *P. cuniculi* have been reported from horses, but the majority of clinical reports do not distinguish among species. They typically cause contagious skin conditions characterized by marked pruritus, extensive pyodermatitis, severe alopecia and considerable loss of weight (Ochs *et al*., 2001), from available literature, it appears (Basu and Aliyu, 1993) that very little work has been done on equine mange in Nigeria and this is more true for Borno State (this is the first report) and thus this study was attempted to know the mite species responsible and at what prevalence in horses from the northern part of the State where the highest concentration of horses abound.

*To whom correspondence should be addressed.

Materials and Methods

A total of 300 locally domesticated horses from 5 local government areas of Northern Borno State were examined for lesions of mange. Deep skin scraping at the periphery of the lesions were made into Petri dishes, brought to the University of Maiduguri veterinary Parasitology Laboratory for examination. 2ml of 10% potassium hydroxide (KOH) was added to each sample and warmed up using a Bunsen flame for 10 minutes until boiled. A drop of the mixture was then placed on a clean glass slide, covered with a clean cover slip and then examined under the light microscope at x 100 objective (Soulsby, 1982).

The mites were identified using suitable morphological and morphometric characteristics as described by Lappage (1968) and Soulsby (1982).

Results

The results of this study has shown that *Sarcoptes, Psoroptes* and *Chorioptes* species of mites commonly infest horses in Northern Borno State with prevalence rates of 4(44.4%), 2(22.2%) and 3(33.3%) respectively (Table 1).

Table 2 shows the prevalence of mange based on the sex and age of the horses examined. Of the 300 horses, only 9(3.0%) were infected out of which 6(66.7%) were males while 3(33.0%) were females with the difference in prevalence statistically not significant ($P>0.05$). Also of the 9 horses infested, 7(77.8%) were adults while 2(22.2%) were young ones, however, the difference was also not statistically significant ($P>0.05$).

Table 3 shows the prevalence of mange based on the predilection site with areas such as the saddle area, head, withers and legs having a prevalence of 4(44.4%), 2(22.2%), 2(22.2%) and 1(11.1%) respectively which is statistically significant ($P<0.05$).

The figures inserted show scanned pictures of the various mites isolated in this study.

Table 1: Prevalence of mites on horses in Northern Borno State.

Mite spp.	**No. (%) of horses infested**
Sarcoptes	4(44.4)
Psoroptes	2(22.2)
Chorioptes	3(33.3)

Table 2: Prevalence of mites based on the age and sex of the horses examined.

	Total examined	**No. (%) infested**
All horses	**300**	**9(3.0)**
Sex:		
Male	251	6(66.7)
Female	49	3(33.3)
Age:		
Young	30	2(22.2)
Adult	270	7(77.8)

Figs. I – V: Scanned pictures of the various mites isolated in this study.

Table 3: Prevalence of mites based on their predilection site.

Predilection site	No. (%) of horses infested
Saddle area	4(44.4)
Head	2(22.2)
Withers	2(22.2)
Legs	1(11.1)

Discussion

This study shows that mange mites though encountered in horses of the arid zone is however, of low prevalence since most of these horses are usually groomed and used for occasional durbars and as reported by Meleney (1985), mites will not survive on healthy, vigorous and well groomed horses.

The findings of varying prevalence of infestation based on sex and age of the horses confirms the report by Wakelin (1984) that animals with mange develop resistance either in form of age, breed and sex which is not immunological in origin and/or could be through specific immunity.

The finding of a higher prevalence on the saddle area though not earlier explained by others can be due to the non-hairy nature of the area as a result of saddling.

Sarcorptes and *Psorptes* species appear to be predominantly responsible for mange in horses due to their contagious nature and apart from the pathogenic effects; sarcoptic mange may be a source of public health hazard as human infestation with the parasite is well known (Soulsby, 1982). It is significant to note that mange is an economically important disease having a worldwide and is noticeable in many countries (Ochs *et al*., 2001).

References

Basu, A.K. and Aliyu, A.I. (1993). Efficacy of ivermectin in the treatment of sarcoptic mange in camels. Annals of Borno, 10: 255-257.

Edward, R. (1992). Textbook of Current Therapy in Equine Medicine. W.B. Saunders Co., pp. 560.

Lappage, G. (1968). Veterinary Parasitology, Oliver and Boyd. Edinburgh/London, pp. 623-813.

Meleney, W.P. (1985). Control of *Psoroptes scabies* in calves with ivermectin. American Journal of Veterinary Research, 43:: 329-331.

Ochs, H.; Lonneux, J.F.; Losson, B.J. and Deplazes, P. (2001). Diagnosis of psoroptic sheep scab with an improved enzyme – linked immunosorbent assay. veterinary Parasitology, 96: 233-242.

Soulsby, E.J.L. (1982). Helminths, Arthropods and protozoa of Domesticated Animals. Bailiere Tindall, London.

Wakelin, D. (1984). Immunity to Parasites. How animals control parasite infections, pp. 134-135.. Edward Arnold Publishers.