Trop. Anim. Hlth Prod. (1992) 24, 121–124

LOUSE AND MITE INFESTATION IN DOMESTIC ANIMALS IN NORTHERN NIGERIA

J. B. D. GEORGE, S. OTOBO, J. OGUNLEYE and B. ADEDIMINIYI

Department of Veterinary Parasitology and Entomology, Faculty of Veterinary Medicine, Ahmadu Bello University, Zaria, Nigeria

SUMMARY

Records of domestic animals brought to the Veterinary Entomology Laboratory for diagnosis of suspected lice and mite infestation over a 10 year period were analysed. From a total of 794 suspected cases, 137 (17·3%) and 247 (31·1%) were positive for lice and mange mites respectively. The most common lice species recorded were Linognathus vituli *(66·7%) on cattle,* L. ovillus *(83·3%) on sheep,* Haematopinus suis *(100%) on pigs and* Menacanthus stramineus *(54·5%) on poultry. Other lice species recorded included* Haematopinus bovis *and* Solenopotes capillatus *on cattle,* Damalinia ovis *on sheep,* Linognathus stenopsis *and* Menacanthus stramineus *on goats,* Goniocotes *sp. on a horse,* Linognathus setosus *and* Menacanthus stramineus *on dogs,* Goniodes gigas, Lipeurus caponis, Menopon gallinae *and* Chelopistes meleagrides *on poultry.*

The most common mite species were Demodex folliculorum *on cattle (96·9%) and on dogs (80·8%),* Sarcoptes scabiei *on pigs (100%) and* Notoedres cati *(80·3%) on rabbits. Other mite species included* Psoroptes communis, Cheyletiella parasitivorax, Ornithonyssus gallinae *and* Dermanyssus gallinae.

INTRODUCTION

Lice and mite infestations often cause stress and loss of condition (Schillhorn van Veen and Mohammed, 1975; Bamidele and Amakiri, 1978; Idowu and Adetunji, 1981; Okon, 1981). Usually a dermatitis is manifested which is characterised by alopecia and necrotic foci. There is also intense pruritus (especially with mange) which leads to biting and vigorous scratching of affected parts (Lapage, 1968; Sweatman, 1973; Idowu and Adetunji, 1981). Where infestation by blood sucking lice is high there may also be anaemia. Low productivity of livestock and poor marketability of their hides and skins (especially in mite infested animals) result in poor economic gains to the farmer (Schillhorn van Veen and Mohammed, 1975; Bamidele and Amakiri, 1978; Mohammed and Agbede, 1980). Infestation with mites is often not noticed because of their very small size and parasitosis may therefore be well established before clinical signs are apparent.

The purpose of this paper is to survey the prevalence of infestation with lice and mites on domestic animals in northern Nigeria and also to draw the attention of those concerned with livestock production to the importance of controlling these parasites.

MATERIALS AND METHODS

Laboratory case history data were obtained from clinical records at the Veterinary Entomology Laboratory of the Department of Veterinary Parasitology and Entomology, Ahmadu Bello University, Zaria. These records covered the period from January 1980 to December 1989. Only animals with suspected or apparent clinical lousiness or mange were used. The animals were screened by the use of a hand magnifying lens and lice were removed with forceps. Skin scrapings were carried out at suspected mange lesions and these were treated by lightly boiling in 10% potassium hydroxide

TABLE I

Number of cases and species of lice infesting domestic animals

Animal species	Total No. of cases	Lice species	
Cattle	21(15·3%)	*Haematopinus bovis*	6(28·6%)
		Linognathus vituli	14(66·7%)
		Solenopotes capillatus	1(4·8%)
Sheep	18(13·1%)	*Linognathus ovillus*	15(83·3%)
		Damalinia ovis	3(16·7%)
Goats	5(3·7%)	*Linognathus stenopsis*	4(80·0%)
		Menacanthus stramineus	1(20·0%)
Pigs	10(7·2%)	*Haematopinus suis*	10(100%)
Horses	1(0·7%)	*Goniocotes* sp.	1(100%)
Dogs	4(2·9%)	*Linognathus setosus*	2(50·0%)
		Menacanthus stramineus	2(50·0%)
Cats	0		
Rabbits	0		
Poultry	77(56·2%)	*Goniodes gigas*	7(9·0%)
		Lipeurus caponis	14(18·2%)
		Menacanthus stramineus	42(54·5%)
		Menopon gallinae	12(15·6%)
		Chelopistes meleagrides	2(2·6%)

and washed with distilled water before examining for the presence of mites. Lice and mites were examined by light microscopy. Identifications were based on Lapage (1968), Macy and Berntzen (1971), Sweatman (1973) and Loomis (1978).

RESULTS

Poultry had the highest rate of infestation with lice (56·2%) followed by cattle (15·3%), sheep (13·1%) and pigs (7·2%) (Table I). Cats and rabbits were never found to be infested. *Linognathus* spp. were found on cattle, sheep, goats and dogs and was the predominant genus on cattle and sheep. *Haematopinus* spp. infested cattle and pigs and was the only species found on pigs (100%). *Menacanthus stramineus* was predominant on poultry although it was also recorded on dogs and goats. Other lice species were less predominant.

Dogs were the hosts most commonly infested with mites being 40·0% of all cases (Table II). Rabbits (24·7%) and cattle (13·0%) were less often infested while other host species were rarely infested. *Sarcoptes scabiei* infested all but 2 of the 9 species of animals examined. *Demodex folliculorum* was recorded from 5 of the 9 animal species examined. Other mite species were more widespread except *Notoedres cati* which was predominant on rabbits and was the only species on cats. *S. scabiei* on pigs was often accompanied by cracking of the skin which resulted in haemorrhagic lesions (Agbede, 1981; Agbede and Sackey, 1991). The lesions often became infected with bacteria and turned into putrefying sores attractive to flies.

DISCUSSION

The implications of these findings on the health of infested animals are various. Intense irritation caused by the movements and bites of lice (especially the *Anoplura*) on host animals affect their health and productivity. This is more pronounced when infestation is heavy. Birds and mammals become restless, preen and scratch intensely, and become weak and listless due to interrupted feeding. Young animals are more

TABLE II

Number of cases and species of mites infesting domestic animals

Animal species	Total No. of cases	Mite species	
Cattle	32(13·0%)	*Sarcoptes scabiei*	1(3·1%)
		Demodex folliculorum	31(96·9%)
Sheep	8(3·2%)	*Sarcoptes scabiei*	5(62·5%)
		Psoroptes communis	2(25·0%)
		Demodex folliculorum	1(12·5%)
Goats	18(7·3%)	*Sarcoptes scabiei*	6(33·3%)
		Psoroptes communis	4(22·2%)
		Demodex folliculorum	2(11·1%)
		Notoedres cati	6(33·3%)
Pigs	17(6·9%)	*Sarcoptes scabiei*	17(100%)
Horses	4(1·6%)	*Sarcoptes scabiei*	1(25·0%)
		Demodex folliculorum	3(75·0%)
Dogs	99(40·0%)	*Sarcoptes scabiei*	6(6·1%)
		Psoroptes communis	1(1·0%)
		Demodex folliculorum	80(80·8%)
		Cheyletiella parasitivorax	8(8·1%)
		Notoedres cati	2(2·0%)
		Unknown mites	2(2·0%)
Cats	2(0·8%)	*Notoedres cati*	2(100%)
Rabbits	61(24·7%)	*Sarcoptes scabiei*	3(4·9%)
		Psoroptes communis	9(14·8%)
		Notoedres cati	49(80·3%)
Poultry	4(1·6%)	*Dermanyssus gallinae*	2(50·0%)
		Ornithonyssus gallinae	2(50·0%)

severely affected than older ones (Lapage, 1968). The blood-sucking activity of lice (*Anoplura*) results in the formation of numerous wounds which exude blood and serum, causing blood loss and attracting biting and myiasis flies (Schillhorn van Veen and Mohammed, 1975). Lice may remove so much blood from their hosts as to result in anaemia and loss of production (Lapage, 1968). Most of the heavily infested animals in this study had been kept in close contact with each other during the wet, humid season.

The pathological effects of infestation with mange mites (especially sarcoptic and demodectic) on the skin is well known (Schillhorn van Veen and Mohammed, 1975; Idowu and Adetunji, 1981). Apart from affecting the health and productivity of animals, marketability is poor and those animals with lesions sell for about one third less than those with no lesions in Zaria. This is because, apart from poor condition their hides and skins are of little value (Mohammed and Agbede, 1980).

For treatment and control, animals should be dusted or dipped with insecticides/acaricides which have good residual character and will not cause environmental contamination or toxicity. The use of ivermectin in the treatment of sarcoptic mange in particular is indicated.

ACKNOWLEDGEMENTS

We gratefully acknowledge the contributions of our colleagues who criticised the manuscript. We also thank the technologists who removed and processed samples from animals presented at the clinic. Finally, we thank the Head of the Department

of Veterinary Parasitology and Entomology for allowing us the use of available facilities.

Accepted for publication August 1991

REFERENCES

AGBEDE, R. I. S. (1981). *Journal of Animal Production and Research*, **1**, 179–180.

AGBEDE, R. I. S. & SACKEY, A. K. (1991). *Student Veterinarian Journal*, **15**, 1–5.

BAMIDELE, O. & AMAKIRI, S. F. (1978). *Nigerian Veterinary Journal*, **7**, 45–50.

IDOWU, L. & ADETUNJI, A. (1981). *Nigerian Veterinary Journal*, **10**, 40–48.

LAPAGE, G. (1968). **Veterinary Parasitology**. 2nd edn (Revised). Oliver and Boyd, Edinburgh, London. pp 634–674.

LOOMIS, E. C. (1978). **Diseases of Poultry**. 7th edn. M. S. Hofstat, B. W. Calnek, C. F. Helmboldt, W. M. Reid and H. W. Yoder Jr. Iowa State University Press (1978), USA. pp 667–704.

MACY, R. W. & BERNTZEN, A. K. (1971). **Laboratory Guide to Parasitology**. Charles C. Thomas. USA. pp 137–327.

MOHAMMED, A. N. & AGBEDE, R. I. S. (1980). Control of ectoparasites of ruminants in Nigeria. In: Proceedings of the National seminar on the current problems facing the leather industry in Nigeria. LERIN (1980).

OKON, E. D. (1981). *Nigerian Veterinary Journal*, **10**, 1–5.

SCHILLHORN VAN VEEN, T. W. & MOHAMMED, A. N. (1985). *Journal of the Nigerian Veterinary Medical Association*, **4**, 53–108.

SWEATMAN, G. K. (1973). **Parasitic Diseases of Wildlife Mammals**. J. W. Davis and R. C. Anderson. Iowa State University Press, USA. pp 3–64.

INFESTATION PAR DES POUX ET DES ACARIENS DES ANIMAUX DOMESTIQUES AU NORD DU NIGERIA

Résumé—Les auteurs ont analysé les relevés de dix années de diagnostic sur des animaux domestiques amenés au laboratoire d'entomologie vétérinaire et suspectés de parasitose externe, par des anoploures, des mallophages (poux) ou des acariens (mites). Sur un total de 794 suspects, 137 (17,3 p. 100) et 247 (31,1 p. 100) se sont révélés, respectivement, positifs à l'égard des "poux" au sens large et des différents agents des gales (mange mites). Les espèces les plus communes de poux sont les suivantes: *Linognathus vituli* (66,7 p. 100) chez les bovins, *L. ovillus* (83,3 p. 100) sur les moutons, *Haematopinus suis* (100 p. 100) sur les porcs et *Menacanthus stramineus* (54,5 p. 100) sur les volailles. Dans les autres espèces rencontrées figurent *Haematopinus bovis* et *Solenopotes capillatus* sur les bovins; *Damalinia ovis* sur les moutons: *Linognatus stenopsis* et *Menacanthus stramineus* sur les chèvres; *Goniocotes* sp. sur un cheval; *Linognathus setosus* et *Menacanthus stramineus* sur les chiens; *Goniodes gigas*, *Lipeurus caponis*, *Menopon gallinae* et *Chelopistes meleagrides* sur les volailles. Les espèces les plus communes d'acariens sont: *Demodex folliculorum* sur les bovins (96,9 p. 100) et les chiens (80,8 p. 100); *Sarcoptes scabiei* sur les porcs (100 p. 100) et *Notoedres cati* (80,3 p. 100) sur les lapins. Les autres espèces rencontrées comprennent *Psoropes communis*, *Chevletiella parasitivorax*, *Ornithonyssus gallinae* et *Dermanyssus gallinae*.

INFESTACION DE ANIMALES DOMESTICOS POR PIOJOS Y ACAROS EN EL NORTE DE NIGERIA

Resumen—Se analizaron los registros de animales domésticos llevados al Laboratorio de Entomología Veterinaria, para diagnóstico de posible infestación con piojos y ácaros, durante un período de 10 años. De un total de 794 casos sospechosos, 137 (17·3%) y 247 (31·1%) fueron positivos para piojos y ácaros, respectivamente. Las especies más comunes de piojos encontradas fueron *Linognathus vituli* (66·7%) en ganado, *L. ovillus* (83·3%) en ovejas, *Haematopinus suis* (100%) en cerdos y *Menacanthus stramineus* (54·5%) en aves. Otras especies de piojos encontradas incluyeron, *Haematopinus bovis* y *Solenopotes capillatus* en ganado; *Damalinia ovis* en ovejas; *Linognathus stenopsis* y *Menacanthus stramineus* en cabras; *Goniocotes* sp. en caballos; *Linognathus setosus* y *Menacanthus stramineus* en perros; *Goniodes gigas*, *Lipeurus caponis*, *Menopon gallinae* y *Chelopistes meleagrides* en aves.

Las especies más comúnes de ácaros fueron, *Demodex folliculorum* en ganado (96·9%) y en perros (80·8%); *Sarcoptes scabiei* en cerdos (100%) y *Notoedres cati* (80·3%) en conejos. Otras especies detectadas incluyeron, *Psoroptes comunis*, *Cheyletiella parasitivorax*, *Ornithonyssus gallinae* y *Dermanyssus gallinae*.