STUDIES ON MANGE MITE INFECTIONS OF SHEEP AND GOATS IN THE SOUTH WESTERN REGION OF NIGERIA

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SUMMARY

A 2-YEAR study was carried out on mange mite infection on sheep and goats in 8 randomly selected towns in South Western Region of Nigeria between January 1977 and December 1978.

Similar survey was undertaken into certain selected villages as well as the University of Ibadan Teaching and Research Farm between this period.

Majority of the goats examined were infected with *Sarcoptes* mange while sheep were infected mainly by *Chorioptes*. A few of both the goat and sheep were infected by both *Psoroptes* and *Chorioptes*. All the animals examined and found affected were treated.

So far there has been no record of this study in Nigeria.

INTRODUCTION

A lot of work has been done on mites affecting domestic animals in parts of Europe and some Asian countries. Among the earliest workers was Robin (1860) who identified *Chemidopts* mutans as causing scaly leg in fowls and turkeys. Megnin 1878 also identified rabbit fur-mite.

One of the greatest works done was by Mellanby (1944) when he identified *Sarcoptes scabie* as itch mite of man-but which could also infest other animals. The life history of the itch mite on man and other varieties was described in full by Mellanby (1952).

Sweatman (1958) studied the validity of the species of psoreptes and he recognised *Psoreptes ovis* as the one infesting sheep on cattle. Most of the works were done outside Africa and there has not been any record of mange infestation of sheep and goats in Nigeria. It is therefore intended to see which of the mites do infest sheep and goats in this part of the world.

MATERIALS AND METHODS

Eight towns and some villages were selected as centres for the purpose of this study and examinations and treatments were done in most cases with the veterinary technical staff of both the Ministry of Agriculture and Natural Resources and the University of Ibadan. Mokola Veterinary Centre and the University of Ibadan Teaching and Research Farm were among the centres chosen.

Moniya, Iwo, Idi Ayunre, Omi-Adio, Iware and Lalupon towns also constitute other centres selected.

With the exception of the Teaching and Research Farm whose survey was done within 1 month because of its intensive management, those of other centres lasted 24 months. Most of the animals considered at these centres are local ones on extensive range. The numbers of different animals brought for treatment at various centres were recorded against the months they were brought and treated. The drug used was 0.02% Benzene hydrochloride (BHC).

In all, a total of 301 goats and 56 sheep were examined and treated for mange infection during the two-year study period. Each of the scrappings done was put in the universal bottle and coded, scrappings were taken from the ears, legs, scrotum, flanks and the tails of the animals. Other areas which markedly showed scabs and postules were also scraped and put in their coded universal bottles. It was ensured that the scrappings were done deep into the sub-dermis until blood came out along

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TABLE 1

January — December 1977.

Month	Code of Place of investigation	Ovine	Species of Mite	Caprine	Species of Mite
Jan.	b	—	—	1	Chorioptes Sarcoptes (Mixed).
	d	—	—	3	Sarcoptes
	f	1	Psoroptes	1	Sarcoptes
	g	2	Chorioptes	5	Sarcoptes
Feb.	a	1	Chorioptes	—	—
	d	—	—	7	Sarcoptes
	f	1	Chorioptes	2	Sarcoptes
March	c	—	—	4	Sarcoptes
	d	—	—	12	Sarcoptes
	e	—	—	5	Sarcoptes
	f	—	—	3	Sarcoptes
April	a	6	Chorioptes (4) Psoroptes (2)	9	Sarcoptes (5) Psoroptes (2) Sarcoptes/Chorioptes Mixed (2)
	c	3	Chorioptes	3	Mixed Sarcoptes and Chorioptes.
	a	—	—	1	Sarcoptes
	b	—	—	4	Sarcoptes
Oct.	c	—	—	3	Psoroptes (2)
	d	—	—	6	Sarcoptes (1)
	e	—	—	5	Sarcoptes
	f	—	—	3	Sarcoptes
	g	1	Chorioptes	—	—
Nov.	b	—	—	9	Sarcoptes (6) Psoroptes (3)
	d	—	—	6	Sarcoptes
	e	—	—	4	Sarcoptes
	f	1	Psoroptes	1	Sarcoptes
	g	—	—	2	Sarcoptes
Dec.	a	—	—	1	Sarcoptes
	c	—	—	3	Sarcoptes (2) Chorioptes
	d	—	—	5	Sarcoptes
	f	—	—	2	Sarcoptes
	g	1	Chorioptes	3	Sarcoptes

Table 1

JANUARY — DECEMBER 1977

Monthly indication of the number of animals and the species of mites obtained.

Key:

- a* = Mokola Veterinary Centre
- b* = Moniya Clinic and environs
- c* = Omi-Adio Clinic and environs
- d* = Lalupon Clinic and environs
- e* = Idi Ayunre Clinic and environs
- f* = Iwo Veterinary Clinic
- f* = Iware Vet. Clinic and environs
- No. in bracket denotes the no of species encountered
- Only months that appear on the tables have records of mite infestation.

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TABLE 2.

JANUARY — DECEMBER 1978

Monthly indication of the number of animals affected and the species of mites obtained.

Month	Code of Place of investigation	Ovine	Species of Mite	Caprine	Species of Mite
Month	Code of Place of Investigation	Ovine	Species of Mite	Caprine	Species of Mite
Jan	a	—	—	1	Sarcoptes
	c	—	—	6	Sarcoptes (3) Psoroptes (3)
	e	—	—	4	Sarcoptes
	f	—	—	2	Sarcoptes
	g	—	—	2	Psoroptes
Feb.	e	6	Chorioptes (3) Psoroptes (3)	9	Sarcoptes
	f	—	—	1	Sarcoptes
	g	—	—	3	Psoroptes (1) Sarcoptes (2)
Mar.	a	—	—	1	Sarcoptes
	d	—	—	1	Sarcoptes
	e	—	—	33	Sarcoptes (27) Psoroptes (6)
	f	1	Psoroptes	1	Sarcoptes
	g	—	Chorioptes	1	Sarcoptes
Apr.	a	—	—	2	Psoroptes
	b	—	—	36	Sarcoptes (13) Psoroptes (8) Mixed Sarcoptes and Chorioptes (15)
	e	—	—	12	Sarcoptes (8)
	f	—	—	1	Mixed (4) Sarcoptes
	g	1	Psoroptes	—	—
	e	—	—	30	Sarcoptes (27) Psoroptes (3)
Sept.	d	—	—	1	Sarcoptes
	f	1	Chorioptes	—	—
Oct	a	—	—	1	Sarcoptes
	c	10	Chorioptes (7) Psoroptes (3)	3	Sarcoptes
	g	—	—	2	Sarcoptes
Nov.	b	—	—	7	Sarcoptes (6) Psoroptes (1)
	f	—	—	2	Sarcoptes
	g	—	—	2	Sarcoptes
Dec.	c	—	—	3	Sarcoptes
	g	—	—	1	Sarcoptes

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with the scabs. This was to avoid any of the mange which had already burrowed into the skin from escaping site for identification purposes and for treatment. Each of the scrappings in the bottle was then put in 5% potassium hydroxide (KOH) solution and boiled for 10 minutes to digest the scabs for easy identification of the mites. This was done for all the specimens collected and put under light microscope for identification.

RESULTS

Out of a total of 357 animals examined (301 goats, 56 sheep); 238 goats or 79.33% were infected with *Sarcoptes caprae*. 27 goats (9%) had both *Sarcoptes caprae* and *Chorioptes caprae* while 36 of them (11.66%) was infected with *Psoroptes communis* or *caprae*. Out of the 56 sheep, 44 of them (80%) had *Chorioptes ovis* while the remaining 12 sheep (20%) had *Psoroptes communis* var *ovis*. All the 18 sheep examined at the Teaching and Research Farm had *Chorioptes ovis*.

DISCUSSION

From the tables it appears that goats are more infested during the first few months and later part of the year. The results of this study showed that presence of mites on animals is periodic and this is influenced by mean temperature, relative Humidity and rainfall. In figs 1 and 2 there appeared to be hardly and presence of mites as from May to around October. This period coincides with period of heavy rainfall and it follows that mites will not survive or at least go into hibernation during the raining season but remerge when rainfall is scanty. Also there seems to be direct relationship between high temperature and presence of mites; from the graph there is high incidence of mites with high temperature. This contrasts Soulsby (1968) when he claimed that mites were more susceptible to dryness. With relative humidity, the relationship is inverse. As the relative humidity, increases there is decrease number of mites. The

claim by Soulsby (1968) that mange disease is seen towards the end of winter and early spring is supported from their abundance during this period. The low level of number of mites during the rains can be explained to mean that since mites attack animals burrow into the skin and form scabs and postules on their skin, rainfall will be hazardous to them since with heavy rainfall, skins are softened and scabs could be easily washed off. This also applies to relative humidity where conditions will be similar to that of rainfall. Mange mites can not survive on anything except warm blooded animal and they can be easily got off during this period by scratching or rubbing their skin against walls, trees or stones or any hard object which will eventually peel the scabs off and expose them.

The formation of scabs by mites is protective — especially against the intense heat and external disturbance. A lot of other factors is likely to influence our results. The drug of choice for the treatment is 0.02% Benzene hydrochloride. Each animal examined and found to have mites was treated with this drug. It had not been possible to monitor the efficacy of the drug since it was not common for the owners to bring their animals for more than two times for treatment. But it was ensured that no animal brought more than one occasion was recorded as new case so as not to influence our data. This was made possible from the case history given by goat-owner and from the case records available at the clinic. Majority of the sheep and goats examined and treated were local ones on free range. Their owners were largely illiterates or semi-illiterates. They would do things to their own convenience. It is therefore possible that affected animals were brought by their owners when convenient for them and probably not at the emergence of the disease. An animal might therefore have been afflicted for more than 3 or more months before owner deems it fit to come

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Fig.1 Seasonal emergence of mites in two selected towns - Mokola and Moniya.

Fig.2 Seasonal emergence of mite in two selected towns Ibi-Ayurre and Iware

for treatment. Besides some owners themselves turned clinicians and applied local medicines and it is only when this failed that they come for help at the clinic. Some owners would not even just care to bring the animals for treatment since they might be planning to slaughter the animal at the next ceremony. Also some owners don't care about the condition of their animals. Mange is a disease of poor conditioned animals and a well-fed and properly managed herd will rarely have mange infection. These and other factors yet to be enumerated are likely to influence our results. Since there has been no record on this mange mite of sheep and goat in Nigeria, more work still has to be done for further revelations especially on its bionomics.

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