

Some ectoparasites of veterinary importance on dwarf sheep and goats under traditional system of management in the humid forest and derived savanna zones of Nigeria

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RÉSUMÉ

Quelques ectoparasites d'importance vétérinaire chez des chèvres et des moutons nains en élevage traditionnel dans les zones forestières humides et de savanes dérivées du Nigéria

Une enquête sur une maladie sévissant depuis dix-huit mois a été réalisée dans un élevage traditionnel villageois de chèvres et moutons nains en zones forestières humides et de savanes du Nigéria. Les ectoparasites d'importance vétérinaire observés comprenaient des tiques, des poux, des puces et des acariens de gale. La fréquence de la gale à *Sarcoptes scabiei* chez des chèvres était respectivement de 24 à 28 p. 100 en zone forestière humide et en savane. Les principaux ectoparasites mis en évidence sur les moutons, spécialement en zone forestière humide, étaient les tiques et les acariens. Les *Rhipicephalus* et *Psoroptes communis ovis* étaient couramment observés chez les moutons. Un cas de myiase cutanée à *Chrysomyia* sp. chez les moutons a été trouvé en zone forestière.

Mots clés : Ectoparasites — Petits ruminants — Nigéria.

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Summary. — During an eighteen month disease survey carried out among village dwarf sheep and goats kept under the traditional system of management in the humid forest and the derived savanna zones of Southern Nigeria, the ectoparasites of veterinary importance encountered included ticks, lice, fleas and mange mites. The prevalence of mange caused by *Sarcoptes scabiei* in goats was 24 p. 100 and 28 p. 100 in the humid forest and derived savanna zones, respectively. Ticks and mange mites were the most important ectoparasites encountered on sheep, especially in the humid forest zone. *Rhipicephalus* ticks and *Psoroptes communis ovis* mange mite were commonly observed on sheep. A case of cutaneous myiasis in sheep caused by *Chrysomyia* sp. was encountered in the forest zone.

Key words : Ectoparasites — Small ruminants — Nigeria.

INTRODUCTION

There is little information of ectoparasitic infestation of sheep and goats in Nigeria. The few publications known, i.e. KUIL (7) and

DIPEOLU (2), reported very scanty infestations of these small ruminants with ectoparasites. In particular, there is no information of ectoparasitic infestation of dwarf sheep and goats which are predominant in the humid

TABLE N°I-Incidence of ectoparasites on dwarf sheep and goats in the humid forest zone

Ectoparasites	S h e e p			G o a t s		
	N° sampled	N° infested	Percentage infestation	N° sampled	N° infested	Percentage infestation
Ticks	98	32	33	373	3	0.6
Lice	10	1	10	373	8	2.4
Fleas	61	2	3	373	9	2.4
Mange mites	74	17**	23	373	89***	24

* *Psoroptes communis ovis* and *Sarcoptes scabiei* ; ***Only *Sarcoptes scabiei*.

forest and derived savanna zones of Southern Nigeria and are raised under the traditional scavenging system of management. With the recent efforts towards increased animal production in Nigeria, greater attention is being paid to the dwarf breeds of sheep and goat because of their suspected tolerance not only of many tropical diseases but also of the hotness of the forest zones of West Africa. FAGBEMI (6) investigated the problems of gastrointestinal helminthiasis of these breeds in the humid zone of Nigeria. In this paper, we report on the prevalence of ectoparasitic infestations of these breeds in the humid and derived savanna zones.

MATERIALS AND METHODS

173 sheep and 373 goats in 11 villages situated within the humid forest zone, and 27 sheep and 781 goats situated within the derived savanna zone were tagged and examined for disease incidence for a period of 18 months. The 11 villages are : Okolo, Maya, Temidire, Adeagbo, Temidire-Aigbede, Ilado Aderounmu, Dagilegbo, Idi-Ata, Abule-Oba, Onigbana. Veterinary visits to all the villages were made weekly. In addition, all the animals were examined individually once a month during the weighing period. Ectoparasites of veterinary importance encountered during these occasions were collected for identification.

Ticks, lice and fleas were preserved in 70 p. 100 ethanol for identification in the laboratory. Skin scrapings of suspected mange cases were obtained with a sharp bladed knife held at a wide angle to the skin surface until slight bleeding occurred. The scrapings were gently boiled in 10 p. 100 potassium hydroxide solu-

tion in test-tubes. The tubes were then centrifuged and after discarding the supernatant fluid, the deposits were placed on slides and examined under the microscope.

RESULTS AND OBSERVATIONS

Table I shows the incidence of ectoparasites of veterinary importance in goats in the humid zone. Out of 373 goats examined in the area, 0.6 p. 100 were infested by ticks, 2.4 p. 100 by lice, 2.4 p. 100 by fleas, and 24 p. 100 by mange mites. Of the 98 sheep inspected, 33 p. 100 carried tick infestation. Only 1 of the 10 sheep examined had lice infestation, while 23 p. 100 of the 74 examined sheep had mange.

Table II shows the incidence of ectoparasites in the derived savanna zone. Out of 271 goats examined in the area, only 1.1 p. 100 were infested by ticks. Of 149 goats examined, 1.4 p. 100 had lice infestation. In an examination of 224 goats 1.4 p. 100 were infested by fleas. 28 p. 100 of 781 goats examined had mange mites. No sheep was examined in this zone.

TABLE N°II-Incidence of ectoparasites on dwarf goats in the derived savanna zone

Ecto-parasite	N° sampled	N° infested	Percentage infestation
Ticks	271	3	1.1
Lice	149	2	1.4
Fleas	224	3	1.4
Mange Mites	781	217**	28

** Only *Sarcoptes scabiei*.

TABLE III-Quantitative evaluation of ectoparasites found on dwarf sheep and goats in forest and derived savanna zones of Nigeria.

Ectoparasite	Sheep	Goats	
	Forest zone	Forest zone	Derived savanna
T I C K S			
<i>Amblyomma variegatum</i>	-	-	2X
<i>Rhipicephalus longus</i>	5x	3x	X
<i>R. ziemanni</i>	x	-	-
<i>R. sanguineus</i>	2x	x	-
<i>R. simus senegalensis</i>	3x	x	x
<i>R. lunulatus</i>	x	-	-
<i>R. sulcatus</i>	x	-	-
<i>R. evertsi evertsi</i>	x	-	-
* Other <i>Rhipicephalus</i> species	14x	2x	x
L I C E			
<i>Linognathus stenopsis</i>	-	5x	4x
<i>Linognathus africanus</i>	7x	-	-
<i>Damalina ovis</i>	3x	-	-
<i>Damalina caprae</i>	-	-	x
F L E A S			
<i>Ctenocephalides felis strongylus</i>	4x	3x	2x
<i>C. felis felis</i>	-	-	x

Key : X = 1 - 10 ectoparasites

2X = 11- 20 ectoparasites etc.

* The species identification are being handled by taxonomic experts and they shall be reported later as addendum.

Table III analyses the relative populations of the ectoparasites found on the animals in the two zones. Apart from *A. variegatum* which was found only on goats in the derived savanna, 7 species of *Rhipicephalus* were encountered and were more numerous on sheep than goats in the forest zone and scarce on goats in the derived savanna. Epidemiological studies showed that the sheep and goats of all age groups were equally affected by ticks, lice and fleas. Tick infestation was predominant between April and November which represent the onset of rains and the early part of the dry season respectively. The observed predilection site for *Rhipicephalus* species was the external auditory meatus, while *A. variegatum* was commonly found in the periorbital area especially between the upper eye-lid and the ear.

Table IV shows the incidence of sarcoptic mange among dwarf goats of different age-groups and sex in the forest and derived

savanna zones between October 1978 and September 1979. Kids in the 4-8 months age group were most often affected. The predilection sites of infection were the dorsum of the pinnae, the face, head, neck, back, sides, ventral parts, legs, the scrotum in bucks and the ventral part of the tail in both sexes. There

TABLE N°IV-The relationship between sarcoptic mange infestation in dwarf goats (October 1978-September 1979) and age and sex

	Age (in months)					Sex		Grand total
	0-4	4-8	8-12	12-24	24+	M	F	
Derived Savanna	35	70	30	19	25	44	135	169
Humid Forest	10	37	10	10	9	12	64	76
Grand Total	45	107	40	29	34	56	199	245

was widespread alopecia in cases of heavy infestation due to constant scratching and rubbing of skin against rough mud walls and other sharp edges as a result of itching and irritation. Super-infections by pyogenic bacteria, mostly *Staphylococcus aureus* and haemolytic *Streptococcus* were observed in 8 cases. Infestation by sarcoptic mange was more common during the cold periods of the year, especially during the harmattan period and during peaks of rains when the animals huddle together on concrete slabs and bamboo or wooden platforms.

A case of cutaneous myiasis in sheep caused by *Chrysomyia sp.* was encountered in the forest zone.

DISCUSSION

This is the first time in recent times that *Rhipicephalus* species have been reported on small ruminants in Nigeria. Previous reports (7, 3) mentioned only *A. variegatum* and *Boophilus spp.*, *Hyalomma rufipes* and *H. truncatum*. Since these studies were undertaken in the relatively hot sahel and northern guinea zones of Northern Nigeria and on breeds which are predominant there, it is reasonable to suggest that rhipicephalines are confined to the wet and humid zones of Southern Nigeria. Furthermore, the fact that, in terms of species and preponderance on small ruminants, larger numbers of rhipicephalines were found in the forest zone than in the less moist derived savanna zone suggests that the *Rhipicephalus* species encountered prefer wet and humid conditions. Previous studies have also reported scanty infestation of small ruminants with ticks, which is at variance with the results of our investigation. We found that such large numbers of ticks had never been encountered in urban areas of Southern Nigeria among the same breeds of small ruminants raised under similar traditional husbandry method. It appears therefore that the rural setting with its more abundant vegetation for grazing presents a better environment for the development of the immature stages of the ticks. It is also evident that in the forest zone, there are more ticks on sheep than on goats. FAGBEMI (6), working in the same zone, found that the

faecal helminth-egg output of sheep was higher than that of goats as regards strongyle and tapeworm infections. The explanation may be that sheep graze on the vegetation for longer periods and more often than goats. We observed in these villages that goats fed more by browsing and also scavenged among household waste and human food.

Some of the rhipicephalines reported here had never been recorded in Nigeria and many of those already recorded in Nigeria had been on cattle. This is probably due to the very few studies of ticks on small ruminants in West Africa generally and Nigeria in particular. The other ectoparasites encountered in this investigation had previously been found on sheep of different breeds in various parts of Nigeria (9, 1, 8). The occurrence of *C. felis strongylus* in these village small ruminants confirms the catholic taste of this species as reported by DIPEOLU and AYOADE (4). There is no doubt that such a large number of ectoparasites on these small ruminants will have an adverse effect on their health status and will serve as one of the factors limiting to successful production. Apart from the well known diseases transmitted by some of the ectoparasites, their physical effects also produce debilitating effects. DIPEOLU and OGUNJI (5) showed the blood changes in sheep associated with tick infestation and DIPEOLU (3) reported paralysis in sheep due to infestation with nymphs of *A. variegatum*. SCHILLHORN VAN VEEN and MOHAMMED (9) showed that anaemia could result from massive infestation with fleas. While further work is essential to determine the extent to which these ectoparasites serve as limiting factors to production, urgent steps should be taken to effect their control.

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OPASINA (B. A.), DIPEOLU (O. O.), FAGBEMI (B. O.). — Algunos ectoparásitos de importancia veterinaria en cabras y carneros enanos criados tradicionalmente en las zonas forestales húmedas y de sabanas derivadas de Nigeria. *Rev. Elev. Méd. vét. Pays trop.*, 1983, **36** (4) : 387-391.

Resumen. — Se efectuó una encuesta sobre una enfermedad ocurriendo desde hace diez y ocho meses en una cría tradicional aldeana de cabras y carneros enanos en zonas forestal húmeda y de sabana de Nigeria. Los ectoparásitos de importancia veterinaria observados incluían garrapatas, piojos, pulgas y acáridos de sarna. Era respectivamente de 24 y 28 p. 100 la frecuencia de la sarna con *Sarcoptes scabiei* en las cabras de la zona forestal húmeda y en sabana. Las garrapatas y los acáridos eran los principales ectoparásitos evidenciados sobre los carneros, particularmente en zona forestal húmeda. Se observaban corrientemente *Rhipicephalus* y *Psoroptes communis ovis* en los carneros. Se encontró un caso de miasis cutánea con *Chrysomyia* sp. en los carneros de zona forestal.

Palabras claves : Ectoparásitos — Pequeños rumiantes — Nigeria.

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