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A Retrospective Study of Diseases of Savanna Sheep Reared Under Extensive Husbandry Practice in Zaria, Nigeria (1977-1999)

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ABSTRACT

A retrospective study of the diseases of savanna sheep reared under extensive management system brought to the Ahmadu Bello University Veterinary Teaching Hospital (ABUVTH), Zaria, Nigeria for treatment between January, 1977 and December, 1999 was carried out. Parasitic infestations were found to be predominant, with helminthosis accounting for 4668 (71.2 %) of the 6555 cases presented. Other diseases encountered in the study are of zoonotic importance and the public health significance of these diseases, in relation to the human population in Zaria, Nigeria is discussed. It was concluded that parasitic infestations are the predominant diseases of sheep in this area. It is advised that farmers intending to keep sheep should rear them under intensive management for effective disease control.

Key words: Savanna sheep, extensive management system, Zaria, Nigeria

INTRODUCTION

Diseases of sheep reared under ranch conditions/ intensive management have been documented in Nigeria (Jagun, 1985). However, the diseases of indigenous Nigerian (savanna) sheep which are usually reared by local farmers under extensive management system have not been documented in Nigeria. Sheep and goats contribute significantly to the meat and milk supply requirements of developing countries, including Nigeria. The animal protein deficiency in the diet of low income Nigerians, which is as a result of the twin problem of the devastation of the sahel drought of past decades and the depletion of beef supply due to the rinderpest outbreaks of the 1980s have contributed to the growing demand for mutton and goat meat as alternative sources of protein for Nigerians (Ajayi *et al.,* 1987). Nigeria's sheep population is estimated to be 22.1 million (FDLPCS, 1991). Despite this, there is still a tremendous demand for sheep and goats in Nigeria, not only for meat and milk, but also for sacrificial purposes (Ate and Umoh, 2001). It has been difficult over the years, to meet the increasing demand for sheep and goat production, because of some serious constraints namely: diseases, lack of adequate feed and adverse climatic factors (Kasali *et al*., 1989; Amase, 1999).

Until the early 1990s, most sheep in Zaria, Nigeria were reared under native husbandry practices that involve the extensive system of management, with no veterinary attention. Even with the advent of established sheep and goat ranches, most small scale livestock farmers still rear sheep under the extensive management system. The diseases of sheep reared under this production system have not been reported in Zaria, Nigeria. This study was therefore conducted to investigate and document the diseases of sheep reared under extensive system of management in this area.

MATERIALS AND METHODS

A total of 6,555 sheep were presented to the Ahmadu Bello University Veterinary Teaching Hospital (ABUVTH), Zaria, Nigeria between January, 1977 and December, 1999 with various disease conditions and a request for treatment was made by their owners. Ninety eight percent (98 % or 6424) and 2 % (131) of the sick

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sheep presented during the study period were Yankassa and Udda breeds respectively. The ages of the sheep presented ranged between 2 days and 7 years. A retrospective study of the records from the case files show that physical examination was conducted by the attending clinicians on duty, faecal samples were examined for gastrointestinal (GIT) parasites (Soulsby, 1968), packed cell volume(PCV) were determined by the microhaematocrit method (Schalm *et al.,* 1975), total plasma protein concentrations were determined using the hand refractometer method (Benjamin, 1961), whole blood was examined for the presence of haemoparasites (Saror and Schillhorn Van Veen, 1977), microbiological specimens were examined for suspected microorganisms as described elsewhere (Harry and Hemsley, 1965; Falade *et al.,* 1974; Osiyemi, 1976) and doubtful results were confirmed at the relevant reference Laboratories of the National Veterinary Research Institute (NVRI), Vom, Plateau state, Nigeria. Ectoparasites encountered were confirmed in the Entomology Laboratory of Faculty of Veterinary Medicine, Ahmadu Bello University, Zaria, Nigeria. Records for 1997 and 1998 were not complete and therefore skipped in this study.

RESULTS

Four thousand, six hundred and sixty-eight (71.2%) sheep had helminthosis. Table 1 show the diseases encountered in the study. The helminths were identified as nematodes *(Haemonchus* spp, *Strongyloides* spp, *Dictyocaulus* spp., *Trichuris* spp., *and Bunostomum* spp.), trematodes or flukes *(Fasciola* spp., *Paramphistomum* spp.) and tapeworms *(Monieza* spp., *Taenia* spp.). The ectoparasites encountered were ticks *(Amblyomma* spp., *Ixodid* spp. and *Rhipicephahus* spp.), mites *(Kneumidocoptes* spp.) and fleas *(Ctenocephalides* spp.). The piroplasms (haemoparasites) found in this study were *Anaplasma ovis, Babesia* spp and *Theileria* spp. Some sick sheep had ectoparasites, piroplasms, helminths, and bacterial diseases as mixed infections. PCV of the sick animals presented ranged between 16-28%, while the total plasma protein ranged between 2.8 - 6.9 g/dl.

DISCUSSION

This study shows that 71.2% of the sick sheep reared under extensive system of management and presented for treatment at ABUVTH had helminthosis. The incidence of helminthosis was high, because most farmers raising sheep under this system do not request for routine medical check up or strategic deworming. The high incidence of helminthosis observed in this study tallies with the report of Pugh and Navarre (2001) who also observed a high incidence of parasitism in sheep and goats presented for clinical examination at the Auburn Veterinary Medical Teaching Hospital (AVMTH), United States of America (USA) between 1993 and 2000. All the sheep presented to the ABUVTH were sick, meaning that unlike dogs and cats, whose owners present them to the hospital for routine medical examination at intervals (Useh *et al*., 2003), local sheep in Zaria are presented to the hospital only when they are sick. The degree of awareness of farmers about the routine provision of veterinary attention to sheep increased with the passage of time, between 1977 and 1999, so that very many sheep were presented for treatment during the period. The period between 1990 and 1999 had less sheep presented to the hospital for treatment, because of the increased awareness to rear sheep under intensive management, with good and routine veterinary attention. Most of such farmers utilized the services of private veterinarians and unskilled personnel to provide health care services on their farms and hence the number of animals presented to the ABUVTH was fewer than previous years. Some of the diseases encountered in the study (brucellosis, salmonellosis, toxoplasmosis) are of zoonotic importance. The occurrence of salmonellosis in sheep in this study is linked to the human population and the poor disposal of faecal waste that contaminates grazing pasture. Since the sheep investigated in this study roamed about freely, it is safe to assume that the human population in this area is exposed to the risk of these diseases, although the extent to which human beings acquire them from sheep in Zaria, Nigeria is not known and was not investigated in the present study. There is therefore the need for veterinary and human public health officials to educate the community here on the public health hazards of brucellosis, salmonellosis and toxoplasmosis.

The control, treatment and prevention of diseases of sheep are fairly documented in many countries of the world (Menzies, 1996; Pugh *et al.,* 1998; Craig, 1998). In Zaria, Nigeria the present study has left no scientist in doubt, that parasitic diseases are a major problem in this part of the country, with helminthosis accounting for 71.2% of the diseases presented for treatment at the hospital. Alawa *et al.* (2003) advocated the use of traditional (herbal) remedies that are available in Zaria, Nigeria to treat parasitic diseases of livestock in this part of the country. This is because of the preference of this, by the livestock owners, who are mostly nomads of rural Nigeria (Abdu *et al.,* 2000). Farmers should also be encouraged to practice intensive sheep farming, in order to provide good pasture for zero grazing, good hygienic practices, good housing and portable drinking water for sheep reared in this area.

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REFERENCES

Abdu, P. A., Jagun, A. G., Gefu, J. O., Mohammed, A. K., Alawa, C. B. I. and Omokanye, A. T.(2000). A survey of ethnoveterinary practices of agropastoralists in Nigeria. In: *Ethnoveterinary Practices, Research and Development* (Gefu, J. O., Abdu, P. A., Alawa, C. B. I., ed.), *Proceedings of the International Workshop on Ethnoveterinary Practices* , Kaduna, Nigeria, 14-18th August, 2000. NAPRI/ ABU, Zaria, Nigeria.

Ajayi, S. A., Shuaibu, Y., Adu, F. D., Ajayi, M. A., Lamorde, A. G. (1987). Sheep and goats production in Nigeria. *Nig. Livestock Farmer* 7: 8-11.

Alawa, C. B. I., Adamu, A. M., Gefu, J. O., Ajanusi, O. J., Abdu, P. A., Chiezey, N. P.,Alawa, J. N. and Bowman, D. D.(2003). *In vitro* screening of two Nigerian medicinal plants *(Vernonia amygdalina and Annona senegalensis)* for anthelmintic activity. *Vet. Parasitol.* 113: 73-81.

Amase, G. T. (1999).Ethnoveterinary Medical Practices in Gboko Local Government Area of Benue state, Nigeria. Unpublished DVM Research Project, Ahmadu Bello University, Zaria, Nigeria. 48pp.

Ate, I. U. and Umoh, J. U. (2001). Effect of sex and species on prevalence of cowdriosis in small ruminants at Ahmadu Bello University Veterinary Teaching Hospital, (ABUVTH), Zaria, Nigeria. *Nig. J. Parasitol.* 22: 59-64.

Benjamin, M. M. (1961). *Outline of Veterinary Clinical Pathology*, 2nd ed. Iowa State University Press, Iowa, USA. p. 108.

Craig, T. M. (1998). Cowdriosis in small ruminants. In: *Proceedings on the Symposium on Health and Diseases of Small Ruminants, Western States Veterinary Conference*, Las Vegas, NV, USA. pp 40-43.

Falade, S., Ojo, M. O. and Seller, K. C. (1974). A serological survey of caprine brucellosis in Nigeria. *Bull. Epizootic Dis. Afr.* 22: 335-339.

FDLPCS (1991). *Nigerian Livestock Resources*, Vol. II. *National Synthesis*. Federal Department of livestock and pest control services. Federal Department of Agriculture and Natural Resources. New Secretariat, Abuja, Nigeria, 48pp.

Harry, E. G. and Hemsley, L. A. (1965). The relations between environmental contamination with septicaemia strains of *Escherichia coli. Vet. Rec.* 77: 241-245

Jagun, A. G. (1985). Major diseases of sheep under intensive rearing on NAPRI farm, Shika. In: *Small Ruminant Production in Nigeria. Proceedings of an International Conference on Small Ruminant Production, Zaria,* Nigeria. 2: 274.

Kasali, O. B., Mukasa-Mugerwa, E., Tekelye, B. and Njau, B. C. (1989). Reproductive wastage in small ruminants in tropical Africa. In: *African Small Ruminant Research and Development. Proceedings of an International Conference,* Bamenda, Cameroon. 85pp.

Menzies. P. (1996). Control and prevention of specific diseases of sheep and goats. In: *Proceedings of the Symposium on the Health and Diseases of Small Ruminants, American Association of Small Ruminant Practitioners,* Nashville, TN, USA. pp. 31-38.

Osiyemi, T. I. O. (1976). Salmonellosis in Nigerian livestock. *Bull. Anim. Hlth. Prod. Afr.* 24: 261-264.

Pugh, D. G. and Navarre, C. B. (2001). Internal parasite control strategies. *The Veterinary Clinics of North America. Food Anim. Pract. Update Small Rumin. Med.* 17(2): 231-244.

Pugh, D. G., Mobini, S. M. and Hilton, C. D. (1998). Control programmes for gastrointestinal nematodes in sheep and goats. *Compen. Contin. Educ. Pract. Vet.* 20: S112-S123.

Saror, D. I. and Schillhorn Van Veen, T. W. (1977). Haematological values of udda and yankassa sheep in the northern guinea savanna of Nigeria. *Trop. Anim. Hlth. Prod.* 79: 245-248.

Schalm, O. W., Jain, N. C. and Carrol, E. J. (1975). *Veterinary Haematology* , 3rd ed. Lea and Febiger, Philadelphia, pp. 199-205.

Soulsby, E. J. L. (1968). Helminths, arthropods and protozoa of domestic animals. 6th ed. The Williams and Wilkins Company, Baltimore. pp 785-794.

Useh, N. M., Oladele, S. B., Adamu, S., Ibrahim, N. D. G., Nok, A. J. and Esievo, K. A. N. (2003). Aetiology and prevalence of canine anaemia in Zaria: a review of 2139 cases observed at the Ahmadu Bello University, Zaria, Nigeria (1990-2003). *Vet. Qrtly.* 25: 150-154.

Table 1. Diseases of sheep in Zaria, Nigeria