

Short Communication

AN INVESTIGATION OF TETRAMERES INFECTION AMONG LOCAL CHICKENS IN MAIDUGURI

BIU\*, A.A. AND HADDABI, I.

Dept. Vet. Microbiology & Parasitology  
Faculty of Veterinary Medicine  
P.O. Box 8136  
University of Maiduguri, Nigeria

\*Correspondence

SUMMARY

A survey of *Tetrameres* species was carried out in Maiduguri. Out of 136 locally domesticated chickens examined 41 (30.2%) were infected with *Tetrameres* species with *T. fissipina* having a prevalence of 25 (60.9%) which was higher compared to *T. americana* with 16 (39.0) though statistically not significant ( $p>0.05$ ). However, the prevalence of the *Tetrameres* species varied according to the age and sex of the local chickens examined. The study revealed that adult chickens had 27 (65.8%) prevalence which was higher than observed in young chickens with 14 (34.2%) though statically not significant ( $P>0.05\%$ ). Also male chickens were more infected 24 (58.5%) when compared with the female chickens, which had 17 (41.5%) prevalence ( $P>0.05$ ).

**KEY WORDS:** Survey, *Tetrameres*, Chickens

INTRODUCTION

Nematodes constitute the most important group of helminth parasites of poultry both in number of species and amount of damage done (Calnek, 1991). They are known most widely as parasites of both plants and animals (found in the eyes, mouth, tongue, digestive tract, lungs, body cavity, muscles or joints). In fact, nearly any location seems to be suitable for some species of nematodes. Nematodes of poultry have either a direct or indirect type of life cycle; about one-half require no invertebrate host, whereas the others depend on such intermediate hosts as insects, snails and slugs for their early stages of development. Nematodes of wild birds that are commonly encountered around the dwellings of commercially raised poultry may constitute a health hazard in their capacity as reservoirs of

infection. In *Tetrameres* infection fowls loose weight, become anaemic, there is parasitic gastritis, indigestion and faeces are chalky, green or flecked with blood (Permin and hnsen, 1998).

Gadzama and Srivastava (1986) and Ahmed and Sinha (1993) previously reported a prevalence of 11.94% and 0.3% for poultry *Tetrameres* species in Maiduguri but did not clearly define their identity and hence the need for this study so as to re-define the prevalence and to identify the various species involved with special consideration on differences based on the sex and age of the chickens affected.

MATERIALS AND METHODS

The proventriculus of locally domesticated chickens slaughtered at the Maiduguri

Market was used for this study. The specimen were collected into specimen bottles containing 2% formalin as a preservative and taken to the Parasitology Laboratory, University of Maiduguri for further examination.

Both the outer and inner serosal surfaces of the proventriculus including the lumen were examined under a stereoscopic microscope (dark contrast) to collect the females which appeared as reddish globular nodules and the males filliform and white as described by Adene and Sellers (1976). Both male and female *Tetrameres* species sizes were measured using the Vernier's caliper as an aid for speciation according to the keys of Soulsby (1982) and statistical analysis of the data based on sex and age of the local chickens examined was done using the student "t" test with "p" values less than or equal to 0.05 regarded as significant (Dibal, 1999).

### RESULTS

The results of this study revealed that of the 136 domesticated local chickens examined, 41 (30.2%) were infected by *Tetrameres* species.

Table I shows the prevalence of *Tetrameres* identified based on their species and the sex and age of the local chickens examined. *Tetrameres fissipina* (males: long filliform 4.5mm long females: reddish globular 2mm wide) had the highest prevalence of 25 (60.9%); compared to *Tetrameres americana* (males: 5.3mm long females: 4.0mm wide) with 16 (39.0%) which was statistically not significant ( $P>0.05$ ). Prevalence based on the sex and age of the local chicken examined revealed that adult local chickens had 27 (65.8%) prevalence higher than the young ones with 14

(34.2%) though statistically not significant ( $P>0.05$ ). Table I also shows that male local chickens were more infected (24 958.55) when compared with the female chickens which had 17 (41.5%) prevalence ( $P>0.05$ ).

**TABLE I: Prevalence of Tetrameres in local chickens in Maiduguri, Nigeria**

Parameter	No (%) of local chicken infected
All Chickens	41 (30.2)
<i>Tetrameres species</i>	
<i>T. fissipina</i>	25 (60.9)
<i>T. Americana</i>	16 (39.0)
<i>Sex of chicken</i>	
Male	24 (58.5)
Female	17 (41.5)
<i>Age of chicken</i>	
Young (< 8wks)	14 (34.2)
Adult (> 8wks)	27 (65.8)

### DISCUSSION

This study revealed 30.2% overall prevalence of *Tetrameres* infection in local chickens which is indeed higher than that previously reported by Gadzama and Srivastava (1986) and Ahmed and Sinha (1993) which might be connected with the exposure to range situations primarily the availability of orthopteran insect intermediate hosts in which the eggs hatch (Adene and Sellers, 1976). The findings of higher prevalence of *T. fissipina* compared to *T. Americana* agrees with the report by Soulsby (1982), that it has a wider distribution especially in the tropics and under poor management conditions (Adene, 1989).

Though prevalence of *Tetrameres* infection varied with the age and sex of the local chickens examined which was statistically not significant, it has been reported by Calnek (1991) that it is primarily the nutritional status that

influences the distribution of infection and subsequent development of immunity.

#### **REFERENCES**

- ADENE, D.F. and SELLERS, K.C. (1976). Tetrameres species in Nigerian Local Chickens. *J. Nig. Vet. Med. Ass.* **5**(1): 70-71.
- ADENE, D.F. (1989). An appraisal of the health management problems of rural poultry stocks in Nigeria. In: Proc. Workshop on Rural Poultry Development in Africa (Sonaiya, E.B. ed.) O.A.U, Ile-Ife, 99.
- AHMED, M.I. and SINHA, P.K. (1993). Prevalence of poultry helminthiasis in an arid zone of Nigeria. *Ind. Vet. J.* **70**: 703-704.
- CALNEK, b.w. (1991). Diseases of Poultry. 9<sup>th</sup> ed. Iowa State Univ. Press, pp731, 738-757.
- DIBAL, N (1999). Elementary Statistics. Yiksha Publ. Co. Nigeria. 1<sup>st</sup> ed. pp85.
- GADZAMA, E.N. and SRIVASTAVA, G.C. (1986). Prevalence of intestinal parasites of market chickens in Borno State. *Zariya Vet.* **1**(2): 126-127.
- PERMIN, A. and HANSEN, J.W. (1998). The epidemiology, diagnosis and control of poultry disease. An FAO Handbook. Pp.17-18.
- SOULSBY, E.J.L (1982). Helminths, Arthropods and Protozoans of Domesticated Animals. 7<sup>th</sup> ed. Bailliere and Tindall, London. Pp. 300.