

**OBSERVATION OF LESIONS ASSOCIATED WITH
GASTROINTESTINAL PARASITES OF GUINEA FOWLS (*NUMIDA
MELEAGRIS GALEATA*) IN ZARIA NIGERIA.**

Nfor Mohamadou Bawe, Ajanusi .o. Joseph*, Agbede Roland Idris*, Esievo K A N**

*Department of animal production and industries, Ministry of livestock, fisheries and animal industries DPIA –
MINEPIA YAOUNDE CAMEROON**.*

mohamadou@justice.com

Department of veterinary parasitology and entomology, Ahmadu Bello University Zaria
Department of veterinary pathology and microbiology, faculty of veterinary medicine, Ahmadu Bello University
Zaria Nigeria.*

Key words: guinea fowl, gastrointestinal parasites, lesions, Zaria

Introduction

In Nigeria, guinea fowl ranks second in the poultry sector, and compares favorably with domestic chicken for meat and egg production (5).

Gastrointestinal helminthes are distributed world wide. This has been shown by reports on prevalence of the helminthes parasites of guinea fowls (1,4,3). Among the helminthes parasites of poultry, nematodes and cestodes constitute the most important group (4, 2). Helminthes are known to compete with the infected hosts, lowering their productivity and in severe cases causing death by blocking the gastrointestinal tract (G.I.T) especially when the worm burden is high (6).

In this study the lesions associated with gastrointestinal helminthes of guinea fowl following natural infection are described.

Materials and methods

Alimentary tracts were obtained from the two hundred and two guinea fowls bought from Zaria markets. They were slaughtered or sacrificed in the helminthological laboratory of the department of veterinary parasitology and entomology, faculty of veterinary medicine, Ahmadu bello University Zaria.

Immediately after slaughter, the various sections of the alimentary tracts were separated in petri dishes to reduce parasite migration. The serosal surfaces were examined for gross lesions before opening up the compartment. These were then examined for parasites and parasitic nodules and haemorrhagic lesions were excised and helminthes picked up. The lesions were fixed in sample bottles containing 10% buffered formalin.

Tissues for histopathological examination were prepared by dehydrating the fixed in ascending concentration of ethanol, clearing in xylene and embedding in paraffin wax. The

tissues were sectioned at 5µ thickness and stained with Haematoxylin and Eosin (Hand E).

This was done at the histology laboratory of the department of veterinary Anatomy, faculty of veterinary medicine, A.B.U. Zaria.

Results

Gongylonema ingluvicola:

The parasites formed convoluted tracks, which appeared as white convolutions with the parasites in the crop mucosa.

Histopathology revealed flattening of the epithelium along the parasitic tracts. The cellular response elicited by the parasites consisted of, mast cell and plasma cell as well as eosinophils. These cells were noticed in the submucosa below the parasitic tract.

Dispharynx spiralis:

The parasites were embedded in the mucosa of the proventriculus. Lesions observed on the mucosa included discolouration, ulceration and petechial haemorrhages.

Histopathology revealed degeneration of the submucosa and necrosis of the tissues of the proventricular gland.

Raillietina species and *Ascaridia numidae*:

These were attached to the mucosa of the ileum. Gross lesions observed were haemorrhages, thinning of the mucosa and oedema of the serosa.

Histopathology revealed swelling and flattening of the intestinal villi as well as cellular (eosinophilic) infiltration of the superficial mucosae.

Discussion

No published records of this nature have been reported in Zaria or other parts of the Northern Guinea zone of Nigeria. This study seems to be the first of its kind in Guinea fowl.

The presence of cellular response, especially eosinophilia in *Gongylonema ingluvicola* in the crop is contrary to report in chicken (3) where no cellular reactions occurred. Cellular reaction could be due to the nature of the parasitic injury of the tissue. Eosinophilia is a major hallmark of many helminthes infections especially of those with tissues invasive stages (6).

The marked inflammation of the mucosa of the crop, the eosinophilic infiltration, compression and cornification of the epithelial cells could be explained as resulting from the host immune response to the infection. This reaction was also noticed in birds infected with *Raillietina* species (*R. tetragona*, *R. echinobothrida*, *R. cesticillus* and *R. magninumida*). However, cellular response was not noticed in birds infected with *Dispharynx spiralis*.

Conclusion

The guinea fowl is a species, which could readily provide the much-needed source of animal protein supplement for Africa and in addition to being a source of protein, the wild guinea fowl provides sporting hunting opportunities. Realisation of the full potentials of the guinea fowl depends on the ability to overcome some problems such as parasitic / Pathological conditions of the birds. And these shall ensure a good farm to fork.

Acknowledgement

The authors wish to thank mallam sale usman, Folaranmi, Daniel Gimba, Sam Otobo for the technical assistance in their laboratories and the ministry of livestock, fisheries and animal industries (DPIA – MINEPIA) CAMEROON for the funds.

References

1. Ayeni, J.S.O and Ayanda , J.O (1982) : *Studies of the husbandry practices and social acceptance of Guinea fowl (Numida meleagris galeata) in Nigeria. Bulletin of animal health production for Africa* 30: 139- 148.
2. Ayeni, J. S.O., Dipeolu, O. O. and Okaeme, A.N. (1983): *Parasitic infections of the grey beasted helmet guinea fowl (Numida meleagris galeata)in Nigeria. Veterinary parasitology* 12, 59 – 63.
3. Fatihu, M.Y. ; Ogbogu, V.C. ; Njoku, C.O. and Sarror , D.I. (1992) : *Observation on lesions associated with some gastrointestinal nematodes of chickens in Zaria, Nigeria. Bulletin of animal health production for Africa*, 40 : 15 – 18.
4. Nfor, M.B.; Ajanusi, O.J.; Agbede, R.I.S.; and Esievo, K.A.N. (1999): *Prevalence of parasites of Guinea fowl (Nuimida meleagris galeata) in Zaria – Nigeria. Bulletin of animal health production for Africa*,47, 103 – 106.
5. Nwagu, B.I; Fulayi, B.A; and Nwagu, F.O (1997): *hatchability of Guinea fowl eggs in Nigeria. Tropical Animal health production.* 63 – 64.
6. Soulsby, E.J.L (1982) : *Helminths, Arthropods, Protozoan of domesticated animals. London English Language book Society and Bailliere Tindall. Pp* 3 – 84.