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Short Communication

Prevalence of Gastrointestinal Helminthes in *Gallus domesticus* in Nigeria

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Abstract. A parasitologic investigation was carried out on the gastrointestinal contents of one hundred domestic fowls (*Gallus domesticus*) in Lagos and Ibadan, southwestern, Nigeria. Seventeen species of helminth parasites were recovered with a total prevalence of 52%. The parasites recovered were cestodes (eight species) and nematodes (nine species). No trematode parasite was recorded. Fowls that were continuously housed, strictly controlled and intensively reared were less liable to infections. This investigation revealed that in Lagos and Ibadan, Nigeria, there is a great spectrum of parasitism of the digestive tract of chickens.

Keywords: parasitosis, gastrointestinal contents, cestodes, nematodes

During the recent years, there has been an improvement of the poultry industry in various parts of Nigeria (Fabiyi, 1972). The more extensive native methods of management are giving way to more intense modern methods of management (Hodasi, 1969). The concentration of parasite eggs in the birds environment is one factor which plays a major role in determining the severity of the infection. The chickens pick up the parasite eggs directly by ingesting contaminated feed, water or litter, or by eating snails, earthworms, or other insects, which can carry the eggs. Management practices largely dictate the type and severity of internal parasite infestation. Unless an efficient rotational system is in place, free-range birds face exposure to contaminated pasture.

In order to contribute to the knowledge of avian diseases in Nigeria, and to undertake for improvement in the traditional poultry farming, a parasitologic investigation based on samplings and analyses of gastrointestinal contents was carried out.

The alimentary canal of one hundred domestic fowls (killed with chloroform) were dissected and examined in 1% physiological saline. The helminth parasites were fixed in formalin acetic acid (FAA) and counted. The cestodes were flattened between two microscopic slides to avoid shrinkage. Identification was confirmed after Chandler and Read (1961) and by the Parasitic Worm Division, British Museum of Natural History.

A prevalence of 52% of gastrointestinal helminth was recorded, from this study. (Table 1). Total seventeen (17) helminth parasites were recovered , cestodes (8) and nematodes (9). The cestodes recovered included *Raillientina tetragona, R. echinobothridia, R. cesticillus, R. pintineri, Choanotaenia infundibulum, Hymenolepis carioca, Amoebotaenia sphenoides* and *Anoplocephala* species. The abundance of the cyclophyllidean cestodes (Davaineidae) was extremely high in the birds. The nematode parasites recovered included *Ascaridia galli, A. numidae, Acuaria spiralis, Strongyloides avium, Hartertia gallinarum, Gongylonema ingluvicola, Subulura brumpti, Capillaria annulata* and *Harieritia gallinarum.*

Table 1. The weekly prevalence of gastrointestinal helminthes infection in *Gallus domesticus*

Number of chickens	Number infected	Prevalence of infection (%)
13	9	69.23
11	2	18.18
11	9	90.00
10	3	27.27
11	4	36.36
14	3	21.42
10	2	20.00
10	10	100
10	10	100
100	52	52

The parasites distribution in different regions of the alimentary canal is presented in Table 2. The species of *Raillientina* were the predominant cestodes recovered from this study. *Raillientina* species are the most pathogenic of poultry tapeworms in Ghana. They require intermediate hosts such as ants and beetles. The birds become infected by eating the intermediate hosts. The intermediate hosts become infected by eating the eggs of tapeworms that are passed in the birds faeces. Heavy infestations can cause weight loss (Soulsby, 1982).

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Table 2. The distribution of gastrointestinal helminthes in different regions of the gut of *Gallus domesticus*

Regions of alimentary canal	Parasite load
Oesophagus	1
Crop	2
Proventriculus	-
Gizzard	-
Duodenum	35
Intestine	634
Caecum	303
Cloaca	-

Birds having limited outdoor runs are at more risk than genuine free-ranging system. Methling *et al.* (1994) found that bedding was the main source of worm infections. Permin *et al* (1997) showed that the rate of establishment of worm infestation was related to the size of the initial dose of infective worm eggs ingested by chickens.

A survey of helminth parasites in backyard flocks in Michigan by litter examination also showed relatively high contamination rates (Nonaka *et al.*, 1991). Poor drainage and ventilation and the feeding of birds off the ground have been associated with infections of *Capillaria* species that can cause severe symptoms such as diarrhoea, weakness, weight loss, and a drop in egg production. The *Ascaridia* species are the largest internal parasitic nematodes causing helminthiasis in poultry. They infect the small intestine and can cause ill-thrift and intestinal compaction (anteritis). Droopiness, emaciation, and diarrhoea are the common clinical symptoms.

It is considered that management practices will impact the type and severity of internal parasite infestation. Unless an efficient rotational system is in place, free-range birds face exposure to contaminated pasture.

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