

Gastro-Intestinal Helminthe Fauna Of Native Domestic Fowl (*Gallus Gallus Domesticus*) In Owerri Area Of Imo State, Nigeria

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ABSTRACT: Studies of some authors all over the world show that the intestinal tract of domestic fowl is subject of infestation by large number of helminth parasites. The present study has shown that our native domestic chicken harbour nearly the same range of worms already found in other domestic fowls, notably cestodes and nematodes and a few trematodes. The affected chickens show emaciation with heavy intensities but ordinarily look healthy with light infections. The domestic chickens are usually kept by the rural people as free range animals where they forage freely in the surroundings picking up insects that harbour most of these worms. Improved method of poultry keeping is necessary in order to advance in the industry.

[J.N.N. Onyirioha. **Gastro-Intestinal Helminthe Fauna Of Native Domestic Fowl (*Gallus Gallus Domesticus*) In Owerri Area Of Imo State, Nigeria.** Researcher. 2011;3(1):124-126]. (ISSN: 1553-9865).
<http://www.sciencepub.net>.

Keywords: Gastro-Intestinal Helminthe Fauna; Domestic Fowl; *Gallus Gallus Domesticus*

INTRODUCTION

Of recent, literature is accumulating on the helminthes of domesticated fowls in West Africa. This is a happy development in view of the increasing importance of poultry industry in the economy of many areas in the sub region. The advance made in poultry industry in West Africa in recent years, no doubts, is due largely to the acquisition of modern management methods and expertise and the introduction of high – yielding breeds of domesticated fowls from other parts of the world, (Hodasi 1973). An attempt on commercializing the native birds on large scale has not been met with equal success because of the low growth rate and therefore low productivity. Consequently, our native domestic chickens still remain part-time occupation. Birds are still reared in traditional way as open free range animals, largely by rural people. In this system, low level of management skill is employed and the birds roost in coops in low sanitary conditions with little control measures against parasitic diseases, Onyirioha (2005).

MATERIALS AND METHODS

From November, 2004 to September, 2005, survey of gastro-intestinal helminth fauna of native domesticated fowls was carried out by intestinal examination of 12 birds purchased from local vendors in markets located in different parts of Owerri area. In the laboratory, the fowls were killed and their intestinal tracts dissected out immediately, cut into parts - the buccal portion, pharynx, oesophagus, crop, proventriculus, gizzard, small intestines, large intestine, rectum, rectal caeca and cloacal portion. These parts were put in clean Petri dishes in physiological saline, spilt open and the

internal contents, including the scrupings of the lining of the walls examined under research dissecting microscope, for worms.

Results

Each of 120 fowls examined was infected with at least one gastro-intestinal helminth species. About 83.33% of the fowls (120) carried mixed infections. A total of 37029 specimens (36161 cestodes and 866 nematodes) were recovered giving an average worm load of 108.57 specimens chicken. Altogether 14 species (7 cestodes and 7 nematodes) were identified, no trematodes were found. The numbers of worms, according to species and site encountered are shown on table 1. The buccal portion, pharynx, oesophagus and cloaca are not present on the table and harboured no worms. No cestode was recovered from the proventriculus upper. Three specimens of cestodes, all *Raillietina echinobothrium*, were recovered from the gizzard of a cock. With respect to site, the number of specimens increased with the increase in number of species, but not in a regular manner. The most heavily infected segment of the intestine was the upper part of small intestine (the duodenum) from which 8 species were identified and 25307 specimens or 68.48% of total worm load were recovered. The least populated segment was the gizzard with 25 specimens or 0.07% of the total load.

In table II the incidence, relative abundance, the mean and range of the species are given. The cestodes were much more abundant than the nematodes, making up 97.66% of total specimens. The most abundance species was *120H cantaniana* which represent 84.98% of the total specimens. The least in abundance is *C Infundubulum* with only one specimen. The worm load ranges from a single

species in most species to as many as 5454 specimens in single infection.

Table 1. Number and Site Distribution of Species of Gastro-intestinal Helminth from 120 Domestic Fowls.

Species	Sites							Total
	crop	Proventriculus	Gizzard	Duodenum	Lower small Intestine	Rectum	Caeca	
Cestodes								
<i>C. incundibulum</i>	-	-	-	1	-	-	-	1
<i>A. sphenoides</i>	-	-	-	815	283	-	-	729
<i>H. cantaniana</i>	-	-	-	22266	9201	-	-	31467
<i>H. carioca</i>	-	-	-	1984	323	-	-	2207
<i>R. cestiiicillus</i>	-	-	-	2	112	1	-	115
<i>R. tetragona</i>	-	-	-	91	597	41	-	729
<i>R. echinobothrida</i>	-	-	3	105	395	37	6	546
Total	-	-	3	25264	10911	79	6	36163
Nematodes								
<i>S. brumpti</i>	-	-	-	-	-	-	5	5
<i>D. spiralis</i>	-	115	-	-	-	-	-	115
<i>C. hamulosa</i>	-	-	-	-	-	-	-	22
<i>G. congolense</i>	-	-	22	-	-	-	-	45
<i>H. brevispiculum</i>	45	-	-	-	-	5	10	15
<i>A. galli</i>	-	-	-	93	242	4	10	349
<i>T. fissispina</i>	-	315	-	-	-	-	-	315
Total	45	430	22	93	242	9	25	866
Grand Total	45	430	25	25357	11153	88	31	37029
No. of Species	1	2	2	8	7	5	4	14

Table II. The Incidence, Relative Abundance, the Mean and Range of Worm-Load of Species of Gastro-intestinal Helminths of Native Domestic Fowls in Lagos State, Nigeria.

Species	Incidence%	Relative Abundance	Mean	Range
Cestodes				
<i>C. incundibulum</i>	0.8	0.00	1.00	
<i>A. sphenoides</i>	21.7	2.97	42.23	2-150
<i>H. cantaniana</i>	39.2	284.98	669.51	1-5454
<i>H. carioca</i>	20.0	5.98	91.96	2-657
<i>R. cestiiicillus</i>	9.2	0.31	10.45	2-53
<i>R. tetragona</i>	45.0	1.97	13.54	1-99
<i>R. echinobothrida</i>	46.7	1.47	9.75	1-118
Nematodes				
<i>S. brumpti</i>	0.8	0.01	5.00	-
<i>D. spiralis</i>	4.2	0.31	23.00	1-107
<i>C. hamulosa</i>	9.2	0.06	2.00	1-3
<i>G. congolense</i>	10.0	0.12	1.75	1-10
<i>H. brevispiculum</i>	10.8	0.04	1.15	1-3
<i>A. galli</i>	40.0	0.94	7.27	1-85
<i>T. fissispina</i>	40.8	0.85	6.43	1-35

Discussion and Conclusions

From previous records (**Gender, 1911; Graber 1954; Nagathyl 1966; Hodasi 1964, 1978 and Fabiyi 1972**), a total of 26 specimens of helminthes have been identified from domestic fowls in parts of West Africa. The list of species of poultry helminths in Nigeria and those from Ghana show some similarities. However some notable differences exist. Of all the 26 species of helminthes seen, 24, including 14 recorded in the present studies, are parasites of the alimentary tract or its derivatives. The remainder (10) was not found in the present study; include *Davainea proglotina*, a cestode, identified in the studies in Ghana. This is said to be widely distributed; **Souisby, (1968)** and high mortality rate among poultry birds in Britain have been, sometimes attributed to the present of *D. proglotina* **Morgan and Wilson, (1938)**. On the other hand, *C infundubulum* not present in this study, so far, recorded from poultry birds in Ghana and Vom area of Plateau, Nigeria. *Hereckis gallinae*, (*apillaria annulata*, *capillaria rectum* (*nematodes*) and *Episthemium gbianse*, *Episthmium africanum* and

Patharmostoma notwi (trematodes) with previous records for Ghana, were absent from the present work and previous work in Nigeria **Fabiyi (1972)**.

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11/11/2010