

A Survey of Gastrointestinal Helminthes of Local Chickens in Abak Local Government Area of Akwa Ibom State.

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ABSTRACT

Rural Poultry as practiced by the rural population is both for consumption and for income generation during festive seasons. The practice of allowing the birds to scavenge for food in the neighbourhood exposes them to disease. This research was an active surveillance of worms which parasitize these rural birds using saturated the salt floatation method. Two hundred sterile samples of the faeces of 200 rural birds were collected randomly from 10 villages in Abak Local government Area. These were transported immediately for analysis in the laboratory using floatation method with saturated salt solution. Viewing with X10 microscope it was discovered that out of the 200 samples examined for helminthes, *Ascaris gallinarium* was found in 92 samples or (46%), *Heterakis Spp* was seen with 62 Or 31% positions, *Capillaria Spp* was 58 or 29% and *Strongyles Spp* was 46 or 23%. The least was *Raillietina Spp* which was found in only 22 (11%). This study to the best of my knowledge is the first attempt to research into the types of worm parasites found in local birds, though it has been conducted in other parts of Nigeria and the World over. It was concluded that there is a light prevalence of helminthes in Abak in rural birds, which will lead to high loses. This we advice for educate the rural community in better husbandry practice to preserve the rural poultry population.

Keywords: Helminths;Rural poultry;Floatation;Saturated Salt

1.1. INTRODUCTION

The conventional rural poultry sector as practiced by a great number of rural populations in Africa and especially Nigeria is in essence, a house hold or a subsistence farming operation [1] with minimum stock size. Low input system production and equally low off-take capacity.

Chickens kept in this system are mainly owned by women for household consumption and for income generation during festive seasons. The common practice here is that the chickens are allowed to fend for themselves by scavenging for food in the neighbourhood.

The free range type of management exposes these chickens to all types of disease and parasites as well as harsh environmental condition and predators. Free ranging birds have an increased opportunity to encounter the infective eggs, larvae, and intermediate host of parasites that can cause serious debilitating infections [2], [3].

Many authors agree to these facts [4], [5], [6], [7] and that helminthes parasites of chickens are prevalent in many parts of the world [8].

Matur *et al.*, [9] reported in his study that there is documented evidence in Nigeria and in States like Anambra, Kaduna (Zaria) to Plateau State as he quoted the following authors [10], [11], [4], [12], [13], [14] respectively.

The aim of this study is to identify the different types of worm that parasitize local chicken in Abak:

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Local Government Area of Akwa Ibom State so as to propose a preventive measure that will help prevent these diseases and make the birds to be more thrifty and productive.

1.2. MATERIALS AND METHODS

A total of 200 faecal samples were collected from 200 local chickens within Abak metropolis. The faecal samples were randomly collected from homes randomly in the same study area. The samples were collected in sterile sample bottles (screw capped) and were immediately transported to the laboratory for investigation. Samples were analysed immediately using saturated simple salt floatation method. The floatation solution was prepared by adding salt to a boiled water until the salt could no longer dissolve in the water. The solution was decanted and stored in a sterile bottle for use when need arises.

Each faecal samples was put into a test tube and the saturated salt solution poured into the test-tube, while stirring to mix the faecal sample and the floatation solution well. The solution was added to the test tube until the test tube almost overflowed, and then a cover lid was placed on top of the test tube with content of the touching the slid.

The mixture was allowed to stand in the rack for 30 minutes where the worm eggs were expected to float to the top.

The coverlid was carefully removed by lifting it straight up and places on another sterile cover slid. The slid was then placed on a microscope for examination at 10 X 10 magnification power.

Since this research focused on gastrointestinal worms, the worm eggs were differentiated from coccidial oocyst through standards set by [15]. The egg for each species of parasite was counted and recorded. Eggs of individual species were later divided by the grams of faecal matter used. The rate of prevalence of each species of worm was calculated by dividing the number of bird's faeces that tested positive for worm eggs by the total number of faeces tested. The result was multiplied by 100 and expresses in percentage.

1.3. RESULTS

The result of the present study revealed that out of the 200 faecal samples of the local chicken examined for intestinal helminthes, *Acaridae gallinarum* was found in 92 of the samples representing 46 %, topping the list among five species of gastrointestinal parasites investigated. *Heterakis* ranked second on the list with 62 (31%), *Capillaria Spp* was found in 58 of the 200 samples tested. This represents 29% and *Strongyles Spp* came fourth with 46 cases representing 23% (Table 1).

Raillietina Spp was identified in only 22 of the 200 faecal samples investigated. Which ranked the lowest of all the gastrointestinal parasites identified in this study? However, each of the 200 faecal samples investigated, none was without or free from endoparasitic infection. Each of the faecal samples tested positive for eggs of 2 or 3 of the GIT parasite investigated.

Table 1. Showing the Parasites identified and their degree of prevalence.

Parasites	No. tested	No. Affected	%Prevalence
A. gallinarum	200	92	46
H. gallinarum	200	62	31
C. Spp	200	58	29
Strongyles	200	46	23
R. Spp	200	22	11

1.4. DISCUSSION

There seems to be no previous research of local chickens in Abak Local Government Area. There is no information available in regards to gastrointestinal parasites of local chicken in this area. The species found in the study was considered the first record of the gastrointestinal worms of local chicken in Abak Local Government of Akwa Ibom State. The author will mention that these species of parasites may not be found in commercial chickens as a result of modern farming practices, which include routine deworming and balanced commercially available feeds.

For the local chicken on the other hand, they roost in the backyards of the houses or the trees without cages or run where the chickens scavenge during the daytime, with free access to the ground, air, fruits, leaves, roots etc. where they have greater contact with faeces and host organism such as earthworms [16].

Reports of studies on the incidence of these parasitic helthminthes have been conducted in some part of Nigeria and in other part of the world. As for this study, five parasitic helminthes were identified with *Ascaris gallinarum* topping the list; this is in agreement with [9]. The high incidence of *Ascaris gallinarum* is because it is common and important helminthes of poultry [17]. Eshetu *et al.*, 2001[18], confirms *Ascaris gallinarum* to be the most prevalent

in the Amhara region of Ethiopia, Citing [19], [20], [21], [22], [23], [24]; as collaborators to this fact. In Nigeria, we have similar reports from [10], [14], [12], [13] and [14].

Other species of parasitic worm recorded in this study were *H. gallinarum* (31%), *Capillaria Spp* (29%), *Strongyles* (23%) and *Raillietina Spp* (11%). The prevalence of *Heterakis gallinarum* (31%) recorded in this study is in agreement with [9] who recorded 31% prevalence from the FCT, higher than what was recorded from in Ethiopia by [18], 17.28%; Kenya (0.3%) as reported by [25] and South Africa with 25.75% quolora by-sea and 27.14% Nontshinga as contained in [26] report.

Excepts from Ethiopia that recorded 32.6% prevalence of *H. gallinarum* as contained in [27].

Capillaria Spp shown in this study was higher than what was recorded in Gaza Strip [16]. Ethiopia [26], and Kenya [25]. This worm though considered less pathogenic in chicken may in the case of heavy infestation result in malnutrition, emaciation, anemia, retarded growth and death.

Raillietina Spp infestation had the lowest rate of prevalence (11%); lower than what was obtained from FCT, Abuja [9] which recorded (19.60%) and 22.20% for *R. echinobothrida* and *R. tetragona* respectively. The reason for lower prevalence of *R. Spp* is uncertain since the Cestode requires an intermediate host like insects, earthworm and snail to continue the life cycle and the chicken will need to ingest this pest to become infected.

Strongyles infestation of 23% was recorded, although the study did not seek to identify the members of the family *Strongylidae*, often parasitic in the gastrointestinal tract. This parasite was reported to cause heavy casualties of geese in New York [27].

In the Nigerian case, these nematodes could be of great concern to the poultry keeper and the Veterinarian.

Conclusively, it could be said that the intensity of endoparasites in local chickens in Abak is high as the range of infestation of these worms per chicken were 3-5. Based on these, local farmers should be educated on improved animal husbandry techniques and the need to practice routine deworming exercise.

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