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PREVALENCE OF AVIAN COCCIDIOSIS WITHIN SPECIES, BREEDS, AND AGE DIAGNOSED AT THE AVIAN CLINICS OF AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

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ABSTRACT

Coccidiosis is a major parasitic disease with a substantial economic impact to poultry industry in Nigeria. The study was conducted at Ahmadu Bello University, Veterinary Teaching Hospital, (ABUVTH) Zaria. The aim was to determine the prevalence of avian coccidiosis diagnosed in avian clinic of the Veterinary Teaching Hospital, within species, breeds and age. Case record files were collected, studied, and clinically diagnosed cases of coccidiosis were extracted. Result showed that out of the 1,768 poultry cases presented, 570 (32.23%) were confirmed as coccidiosis. Most cases were recorded in chickens 28.56% (505). The prevalence was highest in the improved breed 27.71% (490/1768) while the local and unknown breeds had prevalence of 0.45% (8/1768) and 4.07% (72/1768) respectively. Birds within 3-7 weeks of age had the highest prevalence of 18.72% (331/1768) while the lowest prevalence of 1.07% (19/1768) was recorded in birds of unknown ages. Coccidiosis is endemic in Zaria with higher prevalence in chicken, improved breeds and birds within the age of 3-7 weeks. Adequate bio-security measures and decrease population density of birds kept on a given unit area by farmers are encouraged.

Keywords: Chicken**,** Coccidiosis, Improved breeds, Prevalence, Zaria.

INTRODUCTION

Coccidiosis (CD) is one of the most important diseases of poultry that costs the world's commercial chicken producers at least US$ 1.5 billion every year (Arabkhazaeli *et al*., 2014). Birds of any age are susceptible to CD but most birds get infected in the early few weeks of life (Chookyonix *et al*., 2009).The disease is most prevailing among young chicks of 1-5 weeks of age as oocysts could appear in faecal samples of birds as early as 7days of age with the clinical sign apparent by the 4th week (Majero, 2001; Obasi *et al*., 2001).With the continued increase in poultry production in Nigeria (FAO, 2000), it is relevant to continually evaluate the prevalence and management issues associated with common poultry diseases. This study was conducted to investigate cases of CD diagnosed at ABUVTH, Zaria, between 2014 - 2018, in order to provide information with regards to prevalence of CD based on species, breeds, and age, to develop newer strategies of controlling CD.

MATERIALS AND METHODS

This study involved a five–year retrospective survey of CD cases, from January 2014 to December; 2018.The data used for the study were obtained from clinic record books and files in the Avian Clinic of ABUVTH, Zaria. A case was considered as any report to the clinic that was diagnosed as CD. The diagnosis of CD in this study was majorly by history of the case, clinical manifestations observed by the clinicians and post mortem lesions of carcasses of affected birds. Other information such as age of birds, types of bird, production system, nutritional status, sex, and occurrence of concurrent diseases were also considered.

Data analysis

The data obtained were presented in tables with respect to the prevalence of CD and other poultry disease according to species, breeds, and age using descriptive statistics.

RESULTS AND DISCUSSION

Out of a total of 1,768 poultry cases presented and recorded at the Avian Clinic of ABUVTH, within the period studied (January 2014 to December, 2018), 570 (32.24%) cases were confirmed as Coccidiosis.

The prevalence was highest in improved breed 27.71 % (490) while the local and unknown breeds had 0.45% (8) and 4.07% (72) prevalence respectively (Table 1). Farmers tend to keep more of improved than local breeds, therefore, one may expect more of the reported cases to be of improved breed, and hence more of diagnosed cases will be of the improved breed. This finding is in agreement with the report of previous scholars who observed that improved breeds are more susceptible to CD than local breeds of chickens (Muazu *et al*., 2008; Jatau *et al*., 2012; Eke *et al*., 2016). Based on species prevalence, most cases were recorded in chickens, with the highest prevalence of 28.56% (505) while turkeys had prevalence of 1.98% (35) (Table 2).Prevalence rate was lower in other species probably due to decrease in production during the period under review, as a result of inadequate awareness of importance of turkey production as well as other species of poultry, consequently less farmers raised these other avian species, hence reduced number of cases reported. Birds within 3 – 7 weeks of age had the highest prevalence of 18.72% (331) while the lowest prevalence of 1.07% (19) was recorded in birds of unknown ages (Table 3). The results obtained in this study in association with age also support the findings of other scholars (Etuk *et al.,*2004 ; Eke *et al*. 2016) that younger birds are more susceptible to infection than older birds

Table 1: Prevalence of Coccidiosis cases based on breed,reported to the Avian Clinic of ABUVTH from 2014 to 2018

Breeds	CD cases	Non-CD cases	Total No. of cases	Prevalence of CD case (%)
Improved Breed	490	1016	1506	27.71
Local Breed	8	2	10	0.45
Unknown Breed	72	180	252	4.07
TOTAL	570	1198	1768	

Key: CD cases = Coccidiosis cases, Non-CD = Non-Coccidiosis cases, ABUVTH = Ahmadu Bello University, Veterinary teaching Hospital, Improved Breed=commercial layer and broiler recorded in the case files, Local Breed= native bird recorded in the case files, Unknown Breed= bird in the case files in which breed could not be verified

Table 2: Prevalence of Coccidiosis cases based on species,reported to the Avian Clinic of ABUVTH from 2014 to 2018

Species	CD cases	Non-CD cases	Total No. of cases	Prevalence of CD cases (%)
Chicken	505	1148	1653	28.56
Turkey	35	30	65	1.98
Ornamental birds	4	7	11	0.23
Water fowls	1	5	6	0.06
Unknown	25	8	33	1.41
Total	570	1198	1768	

Key:-CD cases= Coccidiosis cases, Non-CD= Non Coccidiosis cases, ABUVTH= Ahmadu Bello University, Veterinary teaching Hospital, Ornamental birds= Ostrich, Peacock, Pigeon, Water fowls= Ducks, Geese, Unknown Breed= Bird in which breed could not be verified

Table 3: Prevalence of coccidiosis cases based on age,reported to the Avian Clinic of ABUVTH from 2014 to 2018

Age (weeks)	CD cases	Non-CD cases	Total No. of cases	Prevalence of CD cases (%)
< 2	20	106	126	1.131
3-7	331	402	733	18.72
8-13	79	225	304	4.47
14	50	139	189	2.82
>14	71	250	321	4.02
Unknown	19	76	95	1.07
Total	570	1198	1768	

Keys:CD cases=Coccidiosis cases, Non-CD=Non Coccidiosis cases, ABUVTH=Ahmadu Bello University, Veterinary teaching Hospital. Unknown Breed= Bird in which breed could not be verified

CONCLUSION

Coccidiosis is endemic in Zaria with higher prevalence in chicken (28.56%), improved breeds (27.1%) and birds within the age of 3-7 weeks (18.72%). Adequate bio-security measures and decrease population density of birds kept on a given unit area by farmers are encouraged.

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