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FIVE YEARS RETROSPECTIVE STUDY ON MONTHLY, YEARLY AND SEASONAL PREVALENCE OF AVIAN COCCIDIOSIS DIAGNOSED AT THE AVIAN CLINICS OF AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

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ABSTRACT

Coccidiosis is one of the most significant diseases with devastating economic impact to poultry industry in Nigeria. This study was conducted at Ahmadu Bello University, Veterinary Teaching Hospital, (ABUVTH) Zaria. The aim was to determine the monthly, yearly and seasonal prevalence of cases of coccidiosis diagnosed in avian clinic of VTH. 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 (32.2%) were confirmed as coccidiosis. The prevalence was high during rainy season (19.8%) with the month of August having the highest prevalence (14.42%). Also, the yearly prevalence was highest in 2016 (15.27%) and least in 2015 (1.13%). Coccidiosis is endemic in Zaria, with higher prevalence in the year 2017, in the Month of August and during the rainy season. Hence, it is recommended that farmers should maintain adequate sanitary measures, avoidance of water spillage and overcrowding, in addition to routine chemoprophylaxis.

Keywords: Coccidiosis, Endemic, Nigeria, Poultry, Prevalence.

INTRODUCTION

Coccidiosis (CD) causes considerable loss in the poultry industry and is one of the major diseases challenging the poultry industry despite efforts made in its prevention and control through chemotherapy (Badran and Lukesova, 2006). It is an intestinal parasitic disease cause by intracellular protozoan parasite of the genus *Eimeria* (Nematollahi *et al*., 2009). Coccidiosis has been reported in most parts of Nigeria (Muazu *et al*., 2008; Jatau *et al*., 2012) and occurs throughout the year in Northern Nigeria but with higher prevalence rates from May to September (Etuk *et al*., 2004; Abdu, 2007). The aim of this study was to determine the monthly, yearly and seasonal prevalence of avian coccidiosis diagnosed in avian clinic of ABUVTH, Zaria.

MATERIALS AND METHODS

A five- year retrospective study (2014-2018) of cases of poultry diseases diagnosed at the Avian Clinic of ABUVTH, Zaria, Nigeria was conducted, and monthly, yearly and seasonal prevalence of coccidiosis was determined. Case record files were collected, studied, and clinically diagnosed cases of coccidiosis were extracted.

Sources of Data

The data used for the study was obtained from the clinic's record books and files in the Avian Clinic of ABUVTH, Zaria. A case was considered as any report to the clinics, which was diagnosed as coccidiosis. Diagnosis of coccidiosis was majorly by history of the case, clinical manifestations observed by the clinicians and post mortem lesions of carcasses of affected birds. The season in

Zaria were categorized as Pre-dry season (October to December), Dry season (January to March), Pre-rainy season (April to June) and Rainy season (July to September) (Sa'idu *et al*., 1994).

Statistical analysis

The data was presented in simple 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. This prevalence rate confirms the presence and endemicity of coccidiosis in Zaria, Nigeria.This prevalence was higher than 11.4 % reported by Grema *et al*. (2014) and very close to33.3% of Jatau *et al*. (2012).

The yearly prevalence of avian coccidiosis, with the highest prevalence (15.27%) recorded in the year 2016 while year 2015 had the lowest prevalence of 1.13% (Table 1). The high prevalence could be attributed to the increase poultry production in this year as a result of decline production in the previous year because of election. More farmers kept birds with high stocking density and failed to maintain proper biosecurity and hygienic practice in their farms hence, high prevalence of CD reported. The lesser prevalence recorded in 2015 may be attributed to the period of national election in the country (Nigeria) as many people did not keep birds at the time. People were scared to raise birds during election year due to post election crisis that may erupt, which usually leads to destruction of properties and loss of lives without any compensation by the government to such victims.

The monthly prevalence of avian coccidiosis cases with the month of August having the highest prevalence (14.42%) while there was low outbreak recorded in December (0.57%) (Table 2). The low outbreak recorded may be due to month of festivity in which birds are slaughtered during that period therefore reducing the number of cases reported.

The seasonal prevalence of avian coccidiosis cases with the rainy season (July – September) having the highest prevalence (19.80%) while the dry season (Jan– Mar.) having the lowest prevalence of 1.70% (Table 3). The high prevalence in the rainy season can be due to the fact that it is positively influenced by the warm and humid weather, which characterizes the rainy season period by providing favourable conditions for the growth and development of the infective oocysts (Alawa *et al.,* 2010; Awais *et al*., 2012). The higher prevalence recorded in rainy season is also in agreement with the finding of Etuk *et al*. (2004) and Grema *et al.* (2014).

Table 1: Yearly prevalence of Coccidiosis (CD) cases reported to the Avian Clinic of ABUVTH from 2014 to 2018

Years	CD cases (%)	Non-CD cases (%)	Sum of cases (%)	Year specific rate (%)
2014	120 (6.79)	419 (23.70)	539(30.49)	22.26
2015	20 (1.13)	362 (20.48)	382(21.60)	5.24
2016	270 (15.27)	185 (10.46)	455(25.74)	59.34
2017	102 (5.77)	135 (7.64)	237(13.40)	43.04
2018	58 (3.28)	97 (5.49)	155(8.77)	37.41
TOTAL	570	1198	1768	

Key: CD cases = Coccidiosis cases, Non-CD = Non-Coccidiosis cases, ABUVTH = Ahmadu Bello University, Veterinary teaching Hospital.

Table 2: Monthly prevalence of Coccidiosis cases reported to the Avian Clinic of ABUVTH from January 2014- December 2018

Months	CD cases (%)	Non-CD cases (%)	Sum of cases (%)	Monthly specific rate (%)
Jan	15 (0.85)	79(4.47)	94(5.31)	15.96
Feb	15 (0.85)	142(8.03)	157(8.88)	15.96
Mar	12 (0.68)	142(8.03)	154(8.71)	7.79
Apr	11 (0.62)	146(8.26)	157(8.88)	7.00
May	20 (1.13)	34(1.92)	54(3.05)	37.04
Jun	33 (1.87)	160(9.05)	193(10.92)	17.10
Jul	83 (4.70)	118(6.67)	201(11.37)	41.30
Aug	255 (14.42)	46(2.60)	301(17.02)	84.71
Sep	61 (3.45)	91(5.15)	152(8.60)	3.45
Oct	30 (1.70)	108(6.11)	138(7.81)	21.74
Nov	25 (1.41)	81(4.58)	106(5.60)	23.58
Dec	10 (0.57)	51(2.88)	61(3.45)	16.39
TOTAL	570	1198	1768	

Keys: CD cases = Coccidiosis cases, Non-CD = Non-Coccidiosis cases, ABUVTH = Ahmadu Bello University, Veterinary teaching Hospital.

Table 3: Seasonal prevalence of Coccidiosis cases reported to the Avian Clinic of ABUVTH from 2014 to 2018

Seasons	CD cases (%)	Non-CD cases (%)	Sum of cases (%)
Dry season (Jan-Mar)	30 (1.70)	375 (21.21)	405 (22.91)
Pre-rainy season (Apr-Jun)	75 (4.24)	459 (25.96)	534 (30.20)
Rainy season (Jul-Sept)	350 (19.80)	181 (10.24)	531 (30.03)
Pre-dry season (Oct-Dec)	115 (6.50)	183 (10.35)	298 (16.86)
TOTAL	570	1198	1768

Keys: CD cases = Coccidiosis cases, Non-CD = Non-Coccidiosis cases, ABUVTH = Ahmadu Bello University, Veterinary teaching Hospital.

CONCLUSION

Coccidiosis is endemic in Zaria, with higher prevalence in the year 2016 (15.27%), in the Month of August (14.42%) and during the rainy season (19.80%). Farmers are encouraged to take adequate sanitary measures, avoidance of water spillage and overcrowding, in addition to routine chemoprophylaxis.

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