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COCCIDIOSIS IN BROILERS OF SELECTED COMMERCIAL FARMS IN TARABA STATE, NIGERIA

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Abstract

Poultry coccidiosis has been reported as a major constraint to successful commercial and backyard poultry farming due to its significant high mortality rates and huge economic losses globally. This study was conducted to assess the prevalence of coccidiosis in broilers in commercial farms of Jalingo and Wukari Local Government Areas of Taraba State. A total of 500 faecal samples from droppings of broilers were randomly collected from the poultry farms in Jalingo and Wukari LGAs of Taraba State. The faecal samples were collected from the rectum of the chicken, using a disposable hand gloves and the ova in each faecal sample of broilers were detected by using floatation technique. A total of 80 birds, from both Local Governments were sacrificed for histopathological assay. Intestinal scrapes were also collected from various parts of the intestines (duodenum, jejunum, gizzard, ilium and the caeca) of freshly slaughtered chickens into clean petri dishes, and the samples were examined microscopically for the presence of oocysts. Data obtained were entered into Microsoft Excel and analyzed using the Statistical Package for

Social Sciences (SPSS) program version 23. Out 500 faecal samples collected 81/500 (16.2%) were positive for coccidian ova across Jalingo and Wukari LGAs of Taraba State with a statistical significant difference of ($\chi 2=5.477$; $P<0.05$). Most of the infected broilers were in the age group 1-3 weeks and 4-6 weeks with a statistically non-significant difference of ($\chi 2=3.305$; $P>0.05$). Infection with Coccidian ova was found to be higher, 19.7% (50/250) in Wukari than in Jalingo. They had 12.1% (31/250). The prevalence of coccidiosis in the gastro-intestinal tract (GIT) of the slaughtered broilers showed that the Caecum had the highest prevalence of 62.5% (25/40) of oocyst while Ilium had the least 37.5% (15/40). The knowledge of the coccidiosis among farmers in Jalingo and Wukari LGAs showed that all of the (12/12) respondents or 100% have heard of the disease. Majority of the respondent 81.8% (9/12) knows about coccidiosis from the veterinary while a few respondent 19.2% (3/12) get to know about coccidiosis from their friends. The Seasonal occurrence of coccidiosis showed majority of the respondent 7/12 (58.3%) attributed the occurrence of coccidiosis to rainy season within the year while 41.7% (5/12) attributed it to anytime of the season. The knowledge of the occurrence of coccidiosis despite preventive measures among farmers showed that majority of the respondent 91.7% (11/12) had Coccidiosis on their farms before while few, 16.7% (2/12) have not had reoccurrence of the disease. The percentage response of respondents based on the poultry population per pen showed that Majority of the farmers 50.0% (6/12) had between 1-200 poultry population per pen on their farm while 25.0% (3/12) had between 201-500 poultry population per pen. Despite the fact that some numbers of the faecal materials examined during the course of this work were negative for oocysts at the time of collection, it is possible that some of these Broilers may be harbouring coccidia in the schizogonic or gametogonic stages of development at the time that the samples were collected. It is therefore necessary to design appropriate control strategies of coccidiosis in order to improve management of poultry birds in farms to boost poultry production in the part of the country.

Keywords: Poultry coccidiosis, Commercial poultry farming, Backyard poultry farming, High mortality rates, Economic losses

INTRODUCTION

Coccidiosis is a common protozoan disease in domestic birds and other fowl, characterized by enteritis and bloody diarrhoea. The intestinal tract is affected, with the exception of the renal coccidiosis in geese. It is caused by protozoan parasites of the family Eimeriidae, genus *Eimeria.* The infection is acquired through the faecal-oral route, when the infected oocyst is consumed with the food or water. After ingestion of sporulated (infective)

oocysts, sporozoites are released that enter asexual and sexual cycles of development resulting in the emergence of thousands of new oocysts in the intestines. These oocysts are passed out of the infected host with faeces where they sporulate and become infective to chickens (Alemayehu *et al.,* 2012).

In Nigeria like in most developing nations, chickens are the most important class of the poultry species in terms of number and rate of investment in poultry production (Zahraddeen *et al.,* 2015). Poultry coccidiosis has been reported as a major constraint to successful commercial and backyard poultry farming due to its significant high mortality rates and huge economic losses globally. Poultry coccidiosis, caused by several distinct species of Eimeria has remained the most economically significant parasitic infection of the poultry industry, worldwide. The disease is endemic in most of the tropical and subtropical regions where ecological and management conditions favor an all-year round development and propagation of the causal agent (Obasi *et al.,* 2006).

Coccidiosis of poultry is mainly host-specific and the different species parasitize specific parts of the intestine. The disease is characterized by droopiness, paleness of the comb, diarrhoea and occasional appearance of blood in droppings. The oocysts exist in the litter, premises and are distributed by clothes, shoes, dust and others (Radiostitis *et al.,* 2007). Several factors influence the severity of infection like age and the number of ocysts eaten (Vegad, 2008). It is a widespread disease in growing chickens around the world that can seriously restrict the development of poultry production. In all parts of the world poultry coccidiosis remain a major constrain in poultry production. With increasing interest in poultry production evidenced by the proliferation of poultry farms, it is pertinent to continually evaluate the prevalence and frequencies of the different Eimeria species and their management in poultry farming.

This study aimed at assessing the prevalence of coccidiosis in broilers in some commercial farms of Jalingo and Wukari Local Government Area of Taraba State.

METHODS

Description of study sites

Jalingo Local Government Area

Jalingo LGA (fig. 1) is roughly located between latitudes 8° 47' to 9° 01'N and longitudes 11° 09' and 11° 30'E. It is bounded to the north by Lau Local Government Area, to the east by Yorro Local Government Area, to the south and west by Ardo Kola Local Government Area. It has a total land area of about 195km^2.

Jalingo LGA has a population of 139,845 people according to the 2006 population census, with a projected growth rate of 3% per annum (Shawulu *et al.*, 2008). Presently, it has a projected population of 165,774 in 2014 (Oruonye, 2014). The relief of Jalingo LGA consists of undulating plain interspersed with mountain ranges. This comprise massive of rock outcrops (mountains) which extends from Kona area through the border between Jalingo and Lau LGAs down to Yorro and Ardo Kola LGAs in a circular form to Gongon area, thus given a periscopic semi-circle shape that is almost like a shield to Jalingo town.

Jalingo metropolis has two major rivers, Mayo-Gwoi and Lamurde, which took their sources from the mountain ranges in Yorro LGA and emptied their contents into the Benue River at Tau village. The valley of River Lamurde is dotted with ox-bow Lakes which are as a result of depositional activities. Jalingo LGA has tropical continental type of climate characterized by well-marked wet and dry seasons. The wet season usually begins around April and ends in October. The dry season begins in November and ends in March (Oruonye, 2013). The LGA has a mean annual rainfall of about 1,200mm^3 and annual mean temperature of about 29°C. Relative humidity ranges between 60-70% during the wet season to about 35 – 45% in the dry season. In term of vegetation, Jalingo is located within the northern guinea savanna zone characterized by grasses interspersed with tall trees and shrubs. Some of the trees include locust bean, sheabutter, eucalyptus, baobab and silk cotton tree. The major ethnic groups of Jalingo LGA are the Fulani, Jibu Kona and Mumuye, while other ethnic groups such as Hausa, Jenjo, Wurkum and Nyandang are also found. Hausa language is widely spoken as a medium of communication for social and economic interactions. The River Lamurde which is the main river along Jalingo town forms a confluence with river Mayo Gwoi in Jalingo town around Magami ward. River Lamurde has extensive flood plain on both sides of the river. The northern bank of the river is heavily occupied by residential settlements despite the increasing devastating effects

of recent floods in the area, while the southern bank is intensively cultivated. The farmers in the area cultivate the land three times per year through irrigation (Oruonye, 2011). With the construction of the new roads and bridges along these rivers and increasing urban population, the land uses along the floodplains of the river is fast changing (Oruonye, 2015).

Wukari Local Government Area

Wukari Local Government Area (fig. 1) was created in 1976 by the then military government of Murtala/Obasanjo as part of the defunct Gongola State. With the creation of Taraba state in 1991 by the Abacha government, Wukari Local Government Area became one of the sixteen (16) Local Government Councils that made up the new state. The Local Government occupies a total land mass of 4,391.812km2 and is located within latitude 7.87 and longitude 9.78. Presently, Wukari is characteristically a multi-ethnic society, comprising of several groups with varying population strength. The most predominant group is the Jukun, though Tiv, Hausa, Fulani and Chamba constitute other significant groups in Wukari (Blench, 2019).

Wukari Local Government Area has a tropical continental type of climate consisting of two seasons, wet and dry seasons. The wet season starts in April and ends in October, while the dry season starts in November and ends in March. The annual temperature ranges from 27^{o}C to 28^{0}C. The LGA is located in the southern part of the Guinea Savannah vegetative zone. The vegetation cover consists mainly of savannah woodland, dominated by *Daniella, Isoberlina* and grasses of *Andropogon* species (Oruonye and Abbas, 2011).

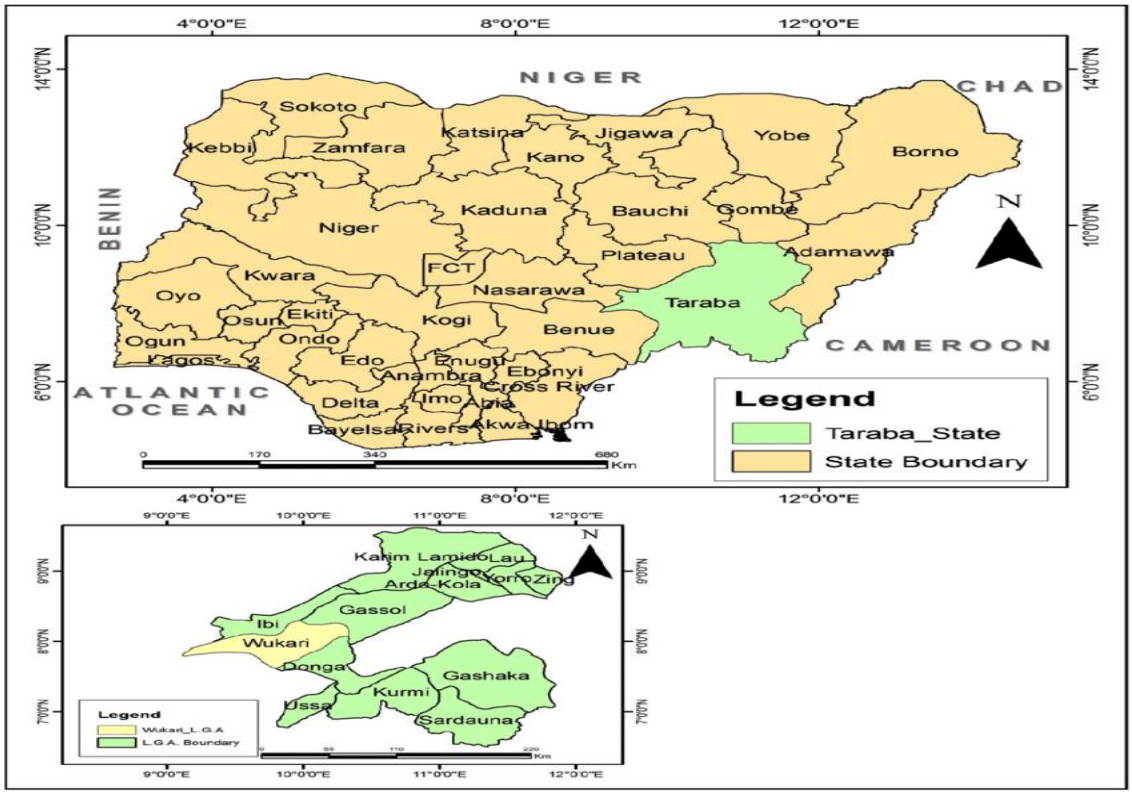

Figure 1: Map of Nigeria showing Taraba State and Study Areas. (Kehinde *et al.,*2015).

Sample collection

A total 500 faecal samples from droppings of broilers was randomly collected from each poultry farm in Jalingo and Wukari LGAs of Taraba State. The faecal samples were collected from the rectum of the chicken, using a disposable hand gloves and were taken to the laboratory for examination. All the samples were brought to the Microbiology/Parasitology laboratory, College of Agriculture, Jalingo, Taraba State for processing and microscopic examination. During sampling, different parameters were recorded such as management practices, breed, age groups, and external lesions. The identification of *Eimeria* species in chickens was done on the basis of criteria such as size, shape and presence or absence of microphyle. The intestine localization and the gross appearance and characteristics of intestinal lesions were also noted for each of the sample. A cross sectional study was done using qualitative faecal examinations. Oocysts in each faecal sample of broilers were detected by using floatation technique, using Sheather's solution.

Gastrointestinal tracts samples (GIT)

Due to the large faecal sample size (500), the samples collected from the gastrointestinal tract were limited to 40 samples from each LGAs. Intestinal scrapes were collected from various parts of the intestines (duodenum, jejunum, gizzard, ilium and the caeca) of freshly slaughtered chickens and put into clean petri dishes. They were examined microscopically for the presence of oocysts and result recorded.

Data analysis

Data generated were analyzed using descriptive statistics with emphasis on percentage. Chi-square was also used to compare the proportion prevalence of coccidiosis in poultry farms in the two LGAs of Taraba State.

RESULTS

Prevalence of coccidiosis based on location

Table 1 shows the prevalence of coccidiosis in broilers based on the location of the farms. The data revealed that the overall infection rate from the study (81\500) 15.9%. Wukari recorded higher number of Positive cases (50/250) 19.7% than Jalingo that had (31/250) 12.1%. Use of X^2 test indicates that the difference significant of (X^2=5.477; P<0.05).

Prevalence of coccidiosis in relation to age of Bird

Table 2 shows the age related prevalence of coccidiosis of the birds sampled. The age group 1-3weeks had the highest prevalence of (41/204) 41.0% while these ages 6 weeks and above had the lowest infection of (20/164) 12.0%. These difference is not significant statistically (X^2=3.305; P>0.05).

Prevalence of coccidiosis infection in the gastro-intestinal tract (GIT) of selected broilers

Table 3 describes the prevalence of coccidiosis in the gastro-intestinal tract (GIT) of the slaughtered broilers is shown in table 3. Results presented shows that gizzards had (12/40) 40.0% coccidian oocysts with the duodenum having (23/40) 57.5% of the coccidial oocys. The jejunum had coccidial positivity of (18/40) 45.0% while as the ilium had (15/40)

37.5%. The Caecum of the broiler had the highest prevalence of (25/40) 62.5% of the coccidial oocysts.

Table 1: Prevalence of coccidiosis in some poultry farms in Jalingo and Wukari L.G.A of Taraba State based on the location of the farm

Farm	Ova of *Eimeria* sp	
	Negative (%)	Positive (%)
Jalingo	219(87.9)	31(12.1)
Wukari	200(80.3)	50(19.7)
Total	419(84.1)	81(15.9)

(X^2=5.477; P<0.05)

Table 2: Prevalence of coccidiosis in some poultry farms in Jalingo and Wukari L.G.A of Taraba State in relation to age of bird

Age (weeks)	Number examined	Oocyst of *Eimeria* sp Positive (%)
1-3	**214**	**41(18.8)**
4-6	**122**	**20(16.0)**
>6	**164**	**20(12.0)**
Total	**500**	**81(15.9)**

(X^2=3.305; P>0.05)

Table 3: Prevalence of coccidiosis in some poultry farms in Jalingo and Wukari L.G.A of Taraba State in the gastro-intestinal tract of the birds

GIT	Oocyst of Emeria SP (%)		Total
	Negative	Positive	
Gizzard	28(60.0)	12(40.0)	40
Duodenum	23(57.5)	17(42.5)	40
Jejunum	12(55.0)	18(45.0)	40
Ilium	25(62.5)	15(37.7)	40
Caecum	15(37.5)	25(62.5)	40

Knowledge of coccidiosis among farmers in Jalingo and Wukari LGAs

The knowledge of coccidiosis as apoultry disease among farmers in Jalingo and Wukari LGA is presented in table 4. It can be seen that all the 12 farmers (12/12) 100% have heard of the disease. Majority of the respondents, (9/12) 81.8% know about Coccidiosis from veteromous while a few respondent 19.2% (3/12) get to know about coccidiosis from their friends.

Seasonal occurrence of coccidiosis among farmers in Jalingo and Wukari LGAs

Table 5 describes the Seasonal occurrence of coccidiosis among farmers in Jalingo and Wukari LGAs is shown in table 5. The majority of the respondents 7/12 (58.3%) attributed the occurrence of coccidiosis to amount of rainfall within the year while (5/12) 41.7% of the respondent indicated that the disease may occur at any time of the year.

Knowledge of coccidiosis in poultry farms despite preventive measures among farmers in Jalingo and Wukari LGAs

The knowledge of the occurrence of coccidiosis despite preventive measures among farmers in Jalingo and Wukari LGAs is charted in table 6. Majority of the respondent (11/12) 91.7% indicated that they had coccidiosis on their farms before implementation of preventive measures. Majority of the respondents (10/12) 83.3% had reoccurrence of Coccidiosis despite preventive measures employed to curtail its outbreak while a few, (2/12) 16.7% did not have reoccurrence of the disease on employement of preventive measures in their poultry farms

Perception of knowledge of coccidiosis by farmers in Jalingo and Wukari LGAs

Knowledge	Number Examined (N=12)	Percentage (%)
Heard of coccidiosis		
Yes	12	100
No	0	0.0
Source of information		
Vet/Vet clinic	9	81.8
Friend	3	19.2

Table 5: Season of recurrence of coccidiosis indicated by farmers in Jalingo and Wukari LGAs

	Number Examined (N=12)	Percentage (%)
Rainy season	7	58.3
Dry season	0	0.0
Others	5	41.7

Table 6: Comparison of occurrence of coccidiosis in some poultry farms in Jalingo and Wukari L.G.A despite preventive measures used to prevent outbreak of the disease

	Number Examined (N=12)	Percentage (%)
Occurrence of coccidiosis on farm		
Yes	11	91.7
No	1	8.3
Coccidiosis outbreak despite preventive measures		
Yes	10	83.3
No	2	16.7

Percentage of farmers that respond on the poultry population per pen among farmers in Jalingo and Wukari LGAs

Table 7 is the percentage response of respondents based on the poultry population per pen among in their farm in Jalingo and Wukari LGAs. Majority of the respondents (6/12) 50.0% had population of between 1-200 birds per pen on their farm while 25.0% (3/12) had between 201-500 poultry population per pen.

Percentage farmers response based on the type of poultry rearing pen by farmers in Jalingo and Wukari LGAs

Table 7 shows the percentage response of respondents based on the type of poultry rearing pen used by farmers in Jalingo and Wukari LGAs. Famers who rear their birds with controlled environment recorded higher percentage response of (9/12) 75.0% than those who rear their birds in open sided pen that had (3/12) 25.0%.

Percentage farmers responses based on the type poultry watering system used by farmers in Jalingo and Wukari LGAs

Table 9 shows the percentage response of respondents based on the type of watering system used among farmers in Jalingo and Wukari LGAs. The automatic watering system used by farmers recorded slightly higher percentage of (7/12) 58.3% than those with manual watering system which had (5/12) 41.7%.

Table 7. Poultry population per pen of farmers in Jalingo and Wukari LGAs

Population per pen	Number of farmers Examined	Percentage (%)
1-200	6	50.0
200-500	3	25.0
>500	3	25.0
Total	12	100

Table 8. Types of pen used by poultry farmers in rearing broilers in Jalingo and Wukari LGAs of Taraba State

	Number Examined (N=12)	Percentage (%)
Open sided	3	25.0
Controlled Environs	9	75.0
Total	12	100

Table 9. Type of poultry watering system used by farmers in Jalingo and Wukari LGAs of Taraba State

Watering system	Number Examined	Percentage (%)
Automatic	7	58.3
Manual	5	41.7
Total	12	100

Percentage response based on the duration of replacement of house litter by poultry farmers in Jalingo and Wukari LGAs

Table 10 shows the percentage response of respondents based on the time it takes to replace poultry litter by farmers of some poultry farms in Jalingo and Wukari LGAs.

Farmers who replace the house litters of the formon a weekly basis recorded the highest percentage of (7/12) 58.3%.

Percentage response based on the water spillage on the litter among farmers in Jalingo and Wukari LGAs

Presented in Table 11 is the percentage response of poultry farmers on water spillage on litters in their farms in Jalingo and Wukari LGAs. Farmers that water spill on their litters recorded the highest percentage of 66.7% with the least being those that water does not spill on the litters that had a prevalence of 33.3%.

Table 10. Duration of house litter replacement among farmers in Jalingo and Wukari LGAs

Replacement of house litter	Number Examined	Percentage (%)
Weekly	7	58.3
2weeks	5	41.7
Total	12	100

Table 11. Poultry farms that had Water spillage on the litter in Jalingo and Wukari LGAs of Taraba State

Spill water on litter	Number Examined	Percentage (%)
Yes	8	66.7
No	4	33.3
Total	12	100

DISCUSSION

The disease coccidiosis occurs most likely when young stocks of poultry pens with birds are concentrated under conditions which permit the accumulation and sporulation of large number of oocysts. Out of the total 500 broiler chicken examined, 81 were infected with a relatively low overall prevalence rate of 15.9%. This may be attributed to the use of coccidiostats added in the poultry feeds and water. Poor poultry management where there is overcrowding of birds leaking water troughs and accumulation of faeces is factors that may contribute to the high prevalence rate of coccidiosis. Birds feed and water are contaminated by oocysts because the environment is damp especially those in the

commercial places where sellers care less about cleaning the chicken cages but concentrate more on making their profit. The findings of this study also correspond with the report of similar previous studies by Slayer and Mallison (2005) who noted that overcrowding, accumulation of faeces and contamination of feed and water by faecal materials of the birds increased the number of oocyst of *Eimeria* sp. It is however in contrast with the report by Olanrewaju and Agbor (2014) who reported that prevalence of coccidiosis among poultry birds slaughtered at Gwagwalada main Market, Abuja, FCT, Nigeria was not influenced by these factors.

The result of the current study showed that Wukari recorded higher prevalence of coccidiosis than Jalingo and this could be attributed to the hygienic measures established by the different farms owner in the fight against coccidiosis and other related diseases in the study locations. The variation in coccidiosis between the study locations may be due to differences in environmental factors existing in the different locations as well as the management methods employed by the different farmers. The level of environmental sanitation, cultural and environmental factors that enhance the transmission of ova or oocysts of coccidia are also common according to the report by Shirzad *et al.* (2011). These authors opined that age of the birds is one of the most important principal factors in the spread of coccidiosis. The findings of this study also showed that the practice of using the same litter for the growth of several batches of large number of birds further exacerbates the problem of persistent coccidiosis in poultry farms. Furthermore, it was observed that environmental control of coccidian is virtually impossible because it has been shown that the soil underneath previously used litter may still contain viable coccidial oocys and when you introduce day-old checks into such sheds; the birds will expose allow sufficient coccidial oocysts leading to infection of. Coccidiosis results in retarded growth of birds at the early age of the chicks. This explains why the young birds in the current study were more susceptible to the parasite than the older ones. This result corresponds with the work of Reyna and Eshetu (2003) who observed the same trend of coccidial infection in some poultry pens.

Examination of the gastrointestinal Track (GIT) of broilers revealed that high gross lesions were observed especially in the caeca followed by the duodenum, jejunum, gizzard and illium segments. Similar findings have been reported in previous studies by Gari *et al.* (2008) and Raman *et* al. (2011). The localization of these lesions in the specific locations of the gastro intestinalof these birds indicate the prediliction sites of the different *Emeria* spp.

It also indicates that the lesions were due to *Emeria* spp for the lesions in the duodenum, *E.* spp. for the lesions in the jejunum, *E.* spp. for the lesions in the gizzards and *E.* spp. for the lesions of the illum segments. These lesions further demonstrate the pathogenicity of this *Emeria* spp. as their account for the mucoid enteritis as noted in fresh poultry droppings due to destruction of tissues of these gastro intestinal routs. According to Gharekhani *et al.,* (2014), epithelium damage caused by *Eimeria* species allows *Clostridium perfringens* to replicate rapidly and produce toxin. Leakage of these protein-rich fluids into the lumen of the gut favors proliferation of *Clostridium perfringens* as well as their toxic product which account for the mortalities due to toxemia.

Our finding showed that all the respondents in this study who are involved in poultry production have knowledge of coccidiosis as a poultry disease. This may be so because a lot of poultry farmers tend to learn about poultry diseases and way of preventing them even before they engage in poultry production. In the same vein, majority of the respondents said they got to know about coccidiosis from the veterinarians. This may be so since the poultry farmers frequently visit veterinary clinics to inquire the best preventive ways of management of outbreaks of poultry diseases.

The result of this finding based on the input of the respondent also showed that coccidiosis is more prevalent during the rainy season than other periods of the year. The results are in line with that of Khan *et al.* (2006) and Sharma *et al.* (2013), who separately observe similar trends. This high prevalence in the rainy period in Nigeria could be attributed to increase in humidity and drops in excessive high temperature, which are conducive for sporulation of oocysts for easy dispersion and transmission.

On the basis of occurrence of coccidiosis despite of preventive measures employed by farmers, majority of the respondent, 83.3% had reoccurrence of coccidiosis despite preventive measures. This might be due to misuse of coccidiostats in terms of dose or improper mixing in feed or the development of resistance of local strain of *Eimeria* to these cocciostats. Our finding is incongruent with Nematollahi *et al.* (2009) who reported failure to control the disease using chemoprophylaxis under the rearing practices.

The findings of this study showed that about half of the respondents 50.0% had between 1-200 birds in their poultry farms per pen. Disease especially coccidiosis is more prevalent when poultry population per pen is high. The considerable low prevalence might be due to the moderate stocking density of the birds in the poultry per pen. Our result corroborates

with the work of Adhikari *et al.* (2008) who attributed high prevalence of coccidiosis to overcrowding of the birds leading to of high number of oocysts in the litter shed by the birds.

The result of this study also showed that majority of the farmers used controlled environment than those who used open sided environment for the rearing of their broilers. This may be a contributing factor to the low prevalence of the disease in the poultry population. A similar finding was reported by Farooq *et al.* (1999). They reported significantly higher mobidity of between 20.89% - 6.49% and mortality of 8.86% - 0.41% in chicken reared on "brick+mud" made floors at the ground level than those reared onconcrete type floors above the ground level that had morbidity of between 7.37% - 1.47%, with mortality of 3.02% - 1.23%. The lower prevalence of coccidiosis in concrete type floor might be due to effective eradication of *Eimeria* oocysts at the time of cleaning of floors of the pens. The lower prevalence of coccidiosis in this study may be attributed to the fact that majority of the farmers use controlled environment. The use of open sided environment might be associated with more chances of coccidian oocysts surviving in the cracks and cervices of floors, which may be difficult for effective cleanliness of farms.

Based on the respondents input on the type of watering system used by the farmers, majority of the farmers used automatic watering system than those who use manual watering system. This may drastically reduce the introduction of pathogens carried by humans into the drinking water of the birds that account for the low prevalence of the disease. This result corroborates the study by Olanrewaju and Agbor (2014) who observed that Poor poultry management where there is overcrowding, leaking water troughs and accumulation of faeces of the birds are factors that contributes to high prevalence of coccidiosis.

This study also showed that majority of the farmers replace the house litter of the birds on a weekly basis which may reduce their contamination with coccidial oocyst in the pen houses as litter tends to harbor microbes that produce a conducive environment for their growth if left to stay for too long. Poor poultry management where there is overcrowding, leaking water troughs and accumulation of faeces are adverse factors that contributed to the high prevalence of coccidiosis. Feed and water of the birds are contaminated by oocysts because the environment is damp especially those in the market place where nobody care about cleaning the chicken cages. The result of this study is in line with the work of

Olanrewaju and Agbor, (2014) who noted that the number of oocysts of *Eimeria* sp in the litter increases significantly at the time of slaughter of the birds and also at the time of placement of a subsequent flock with new stock of birds.

Our study also showed that majority of the farmer's spill water on their litter which may account for the high prevalence of coccidiosis in the broilers across the study areas. Water spillage on litters makes the litters' damp which provide more conducive environment for the growth of microbes as well as sporulation of the oocysts. This conforms to the work of Slayer and Mallison, (2005) who documented that overcrowding of the birds, accumulation of faeces and contamination of the feed and water with the faecal materials that have oocysts increases the number of *Eimeria* sp oocyst in the pen. This exposes most of the birds to infection leading to outbreak of the disease.

CONCLUSION

The study reveals that coccidiosis remains a significant challenge in commercial poultry farming in Jalingo and Wukari Local Government Areas of Taraba State. With a prevalence rate of 16.2% among the sampled broilers, the disease predominantly affects younger birds, particularly those aged 1-6 weeks. Wukari showed a higher infection rate compared to Jalingo. The caecum exhibited the highest prevalence of oocysts among the intestinal parts examined. Despite widespread awareness of the disease among farmers, primarily through veterinary sources, and the belief that coccidiosis is more common during the rainy season, preventive measures are not consistently effective, as evidenced by the high reoccurrence rates on farms. The study underscores the need for improved control strategies to mitigate the impact of coccidiosis and enhance poultry production in the region.

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