

Survey on prevalent diseases in commercial poultry farms in Yewa South Local Government, Ogun State

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Abstract

A survey on the prevalent diseases in commercial poultry farms was carried out in Yewa South local Government Area, Ogun State, Nigeria. Most poultry farmers in the study area have lost returns on their investment due to immune suppression leading to poor performance, illness and death of their flock. This was due to lack of research literature on disease prevalent in the study area. To reduce this menace, it is important to know the poultry diseases that are peculiar to the study area so as to help intending farmer prepare adequately before setting up a poultry farm in the locality. The data for the survey was collected using a total of one hundred and twenty well-structured questionnaires from poultry farmers of selected poultry farms. Stratified random sampling method was used to collate data. An oral interview and a close ended questionnaire was structure to acquire information in the following areas: status of respondents; management information of the birds; disease status of the birds. According to the data obtained from the study, Newcastle disease (72.0%), coccidiosis (59.0%), chronic respiratory disease (CRD) (44.0%), infectious bursal disease (IBD) (37.0%), fowl pox (26.0%), fowl cholera (25.0%), egg drop syndrome (21.0%), fowl typhoid (13.0%), marek's disease (10.0%) and avian influenza (4.0%) are the major disease of economic importance in poultry business in the study area. According to the data obtained from the respondents, NCD, IBD, Coccidiosis, and CRD are the most common diseases among poultry farms in the study area. Newcastle disease (72.0%) which has the highest number in the frequently occurring disease in poultry farms in the study area. As such a complete biosecurity measures should be imposed to the farms and also a proper vaccination schedule should be adhered to.

Keywords: Newcastle Diseases, poultry, prevalence, Yewa-South

Enquête sur les maladies répandues dans les fermes commerciales de volaille dans le gouvernement local du Sud Yewa, State Ogun



Résumé

Une enquête sur les maladies répandues dans les exploitations de volailles commerciales a été réalisée dans la zone des gouvernements locaux du sud de l'Yewa, l'État d'Ogun, le Nigéria. La plupart des éleveurs de volailles de la zone d'étude ont perdu des retours sur leur investissement en raison de la répression immunitaire menant à une mauvaise performance, à une maladie et à la mort de leur troupeau. Cela était dû au manque de littérature de recherche sur la maladie prévalant dans la zone d'étude. Pour réduire cette menace, il est important de connaître les maladies de la volaille propres à la zone d'étude afin d'aider à l'intention des agriculteurs à préparer de manière adéquate avant de créer une ferme de volaille dans la localité. Les données de l'enquête ont été collectées à l'aide d'un total de cent vingt questionnaires bien structurés de producteurs de volaille de fermes de volaille sélectionnées. La méthode d'échantillonnage aléatoire stratifiée a été utilisée pour

rassembler des données. Une interview buccale et un questionnaire minutieux ont été une structure pour acquérir des informations dans les domaines suivants: Statut des répondants; informations de gestion des oiseaux; état de la maladie des oiseaux. Selon les données obtenues à partir de l'étude, la maladie de Newcastle (72,0%), la coccidiose (59,0%), une maladie respiratoire chronique (MRC) (44,0%) (44,0%), une maladie de la bourse infectieuse (MBI) (37,0%), la varicelle (26,0%) , le choléra de la poule (25,0%), le syndrome de goutte d'œufs (21,0%), la typhoïde de la flotte (13,0%), la maladie de Marek (10,0%) et la grippe aviaire (4,0%) constituent la principale maladie de l'importance économique dans les activités de volaille dans la zone d'étude . Selon les données obtenues des répondants, des NCD, des MBI, de la coccidiose et de la MRC sont les maladies les plus courantes chez les fermes de volaille dans la zone d'étude. Maladie de Newcastle (72,0%) qui a le plus grand nombre dans la maladie fréquente dans les fermes de volaille dans la zone d'étude. En tant que telles mesures de biosécurité complètes, devraient être imposées aux exploitations et à un calendrier de vaccination approprié doit être respecté.

Mots-clés: Maladies, Newcastle, Volaille, Prévalence, Sud de Yewa

Introduction

The importance of poultry industry such as food production, contributing to rural household income and ultimately adding to the growth and sustainability of the Nigeria economy cannot be undermined (Ambali *et al.*, 2003). Because there have been continuous increase in the number of poultry farms and flock size in the country which was thought to be approximately 190 million birds (Orajaka, 2005). To meet the United Nation Sustainable Development Goals (SDGs), providing qualitative and cheap animal protein is a must (Ekiri *et al.*, 2021). Ekiri *et al.* (2021) further elucidated that among the contributors to National growth in agricultural sector, poultry industry is key. This is so because the industry is among the top livestock sector in Nigeria on commercial basis. Poultry flocks can convert grains, agricultural and industrial products and by-products into quality products (egg and meat) for human usage (Jatau, 2016). Their adaptability to intensive management and large scale production accounts for the growth of the industry worldwide. This significant and important aspect of the agricultural sector is being faced with constraints of high mortality resulting majorly from infectious diseases of viral, bacterial and fungal origin

(Guéye, 2004; Chansiripornchai, 2004; Abdu *et al.*, 2005), and other non-infectious sources like housing, feeding, breeding, marketing and information dissemination (Guéye, 2004). In the last 20 decades, losses experienced in the poultry industries which are linked to viral disease outbreaks alone have increase astronomically from 3 billion (three billion) in 2009 to about 300 percent increases in the same figure in 2020 (Musa *et al.*, 2010). Generally, in Nigeria, major diseases of poultry predominantly identified in commercial poultry are Newcastle disease (ND), Infectious bursal disease (IBD) or Gumboro, Fowl cholera, Coccidiosis, Mycoplasmosis, Fowl typhoid, Marek's disease (Adene, 1996). Diseases caused by virus (most especially Newcastle disease and Infectious Bursal Disease) have been identified to cause significant havoc in Nigeria poultry sector (Ekiri *et al.*, 2021). Most poultry farmers have lost returns on their investment due to immune suppression leading to illness, reduction in number of eggs produced and ultimately death of flocks. To prevent this menace, it is important to know the poultry diseases that are peculiar to different locality so as to prepare adequately before setting up a poultry farm in such locality.

The research will therefore help to uncover

prevailing poultry disease in Yewa-South Local Government of Ogun State. It will further help in suggesting possible solutions to this menace to enhance the growth of poultry industry.

Materials and methods

Study area

This research was conducted in selected commercial poultry farms in Yewa South Local Government of Ogun State. The

Local Government lies between Longitudes 2°47'24"E and 3°6'48"E, and Latitudes 6°37'46"N and 6°55'42"N. The area is bounded on the East by Ifo and Ado – Odo/Ota local Government and on the West by Ipokia Local Government and north by Yewa North. The Local government area is inhabited predominantly by the Yoruba speaking people of South Western Nigeria. It has a total land area of 629.38 square kilometers, with population of 150,850.



Figure 1: Map of Yewa South Local Government

Data collection

The data for the survey was collected using a total of one hundred and twenty well-structured questionnaires from poultry farmers of selected poultry farms in the study area. Due to unequal distribution of poultry farms in the towns under study. Stratified random sampling method was used to collate data. The structured interview guide was divided into three sections to acquire information from farm personnel on the following: status of respondents; management information of the birds; disease status of the birds (Ukashatua *et al.*, 2012).

Data analysis

In other to achieve the objectives of this study, the data collected was subjected to descriptive analysis (frequency and percentage) using Statistical Package for Social Sciences (SPSS).

Result and discussion

According to Table 1, which shows the Socioeconomic Distribution of respondents in the surveyed area, 45.61% of the respondent had 6 to 10 years of experience, while 7.9 % had 21 years and above experience. 25.44 %, 6.14% and 14.91% was for those who had 11 to 15, 16 to 20 and below five year experience respectively. Males had highest percentage (99.1%) which shows that they are more actively involved in poultry farming in the study area than female with 0.9%. All respondents had a level of formal education. 64.9 % of them had Tertiary education while 14.0% and 21.1% had primary and secondary education respectively. The table further reveals that 86% of the respondents are fully poultry farmers while 14% are partly involved in poultry farming.

Table 1: Socio-economic distribution of respondents in the surveyed area

Parameters	Frequencies	Percentages
Years of experience		
..	17	14.91
6 to 10	52	45.61
11 to 15	29	25.44
16 to 20	7	6.14
...	9	7.9
Total	114	100
Sex		
Male	113	99.1
Female	1	0.9
Total	114	100
Level of education		
No formal education	0	0
Primary	16	14.0
Secondary	24	21.1
Tertiary	74	64.9
Total	114	100
Is Poultry farming your full time Job		
Full time	98	86
Part time	16	14
Total	114	100

Field result (2020)

Figure 2 shows the flock size of commercial poultry farms in Yewa South Local Government. One third of the respondent (33%) of the poultry farms had flock size between 1001 and 5000 birds. Those who had flock size between 1-100, 101-500, 501-1000 and 5001 above represent 12%, 14%, 20% and 21%, respectively.

Table 2 shows the distribution according to type of poultry bird reared and management system. About Sixty-nine percent (69.3 %) of the respondent reared Layers alone while about two percent (2 %) reared broilers alone. Nineteen respondents reared both Layers and Broilers representing (16.7 %) of the total respondents. Out of the farms surveyed, about 87% are practicing intensive system of poultry management,

while 10% and 1.8% practiced extensive system and semi-intensive of management respectively. About 80% of the respondent obtained their stock from hatchery while 18% and 0.9% obtained theirs from open market and government agencies especially Agricultural Development Program (ADPs) respectively. Majority of the respondent (85.1%) buy commercially formulated feed. The sources of water used on the farms were both Bore hole and well (48.2 % and 47.2% respectively).

Table 3 shows the distribution of bio security measures practiced on the surveyed farm. Higher percentage of the surveyed farm had foot dips and wash farm utensils daily (69.3% and 55.3%). 87% do not have farm wears while 69% do not fumigate their farm premises daily.

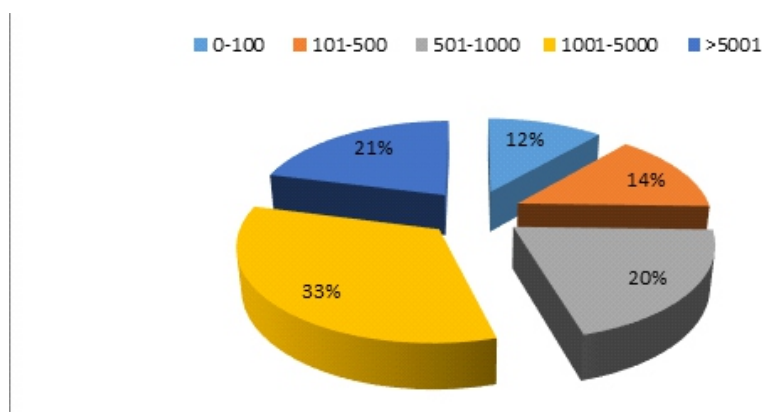


Fig 2: Flock size kept in commercial poultry farms in study area

Table 2: Distribution of poultry type and management system

Parameters	Frequencies	Percentages
Type of Poultry Reared		
Layers	79	69.3
Broilers	3	2.6
Noilers	2	1.8
Cockerel	2	1.8
Layers and Broilers	19	16.7
Broilers and Noilers	5	4.4
Layers and Noilers	1	0.9
Layers, Broilers and Turkey	1	0.9
Turkey	2	1.8
Others not listed	0	0
Total	114	100
Source of Stock		
Open market/Retailers	21	18.4
Government outlets (ADP)	1	0.9
Hatchery	92	80.7
Total	114	100
Type of feed used		
Commercial Feed	97	85.1
Locally formulated feed	17	14.9
Total	114	100
System of Management		
Intensive	100	87.7
Semi intensive	12	10.5
Extensive	2	1.8
Total	114	100
Source of water		
Bore hole	55	48.2
Well	54	47.4
Others	5	4.4
Total	114	100

Field result (2021)

Table 3: Distribution of biosecurity measures practiced on the farm

Parameters	Frequency	Percentages
Foot dip		
Yes	79	69.3
No	35	30.7
Total	114	100
Farm wears		
Yes	27	23.7
No	87	76.3
Total	114	100
Daily Fumigation of the Farm premises		
Yes	45	39.5
No	69	60.5
Total	114	100
Daily washing of farm utensils		
Yes	63	55.3
No	51	44.7
Total	114	100

Field result (2020)

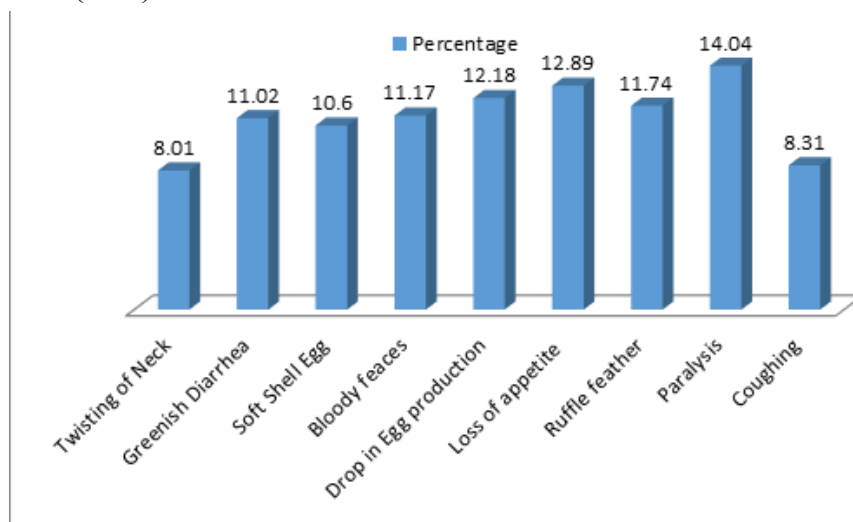


Figure 3: Distribution according to signs of disease noticed in commercial poultry farms (Source: Field Survey, 2020)

Disease prevalent in commercial poultry farms in Yewa South Local Government of Ogun State as expressed in Figure 4 showed that Newcastle disease is the most predominant disease followed by

Coccidiosis and Chronic respiratory disease. Gumboro disease, egg drop syndrome, fowl cholera and fowl pox has lower values of 40, 34, 29, 28 percent respectively. Bird flu (Avian Influenza) was the least occurring disease in the study area.

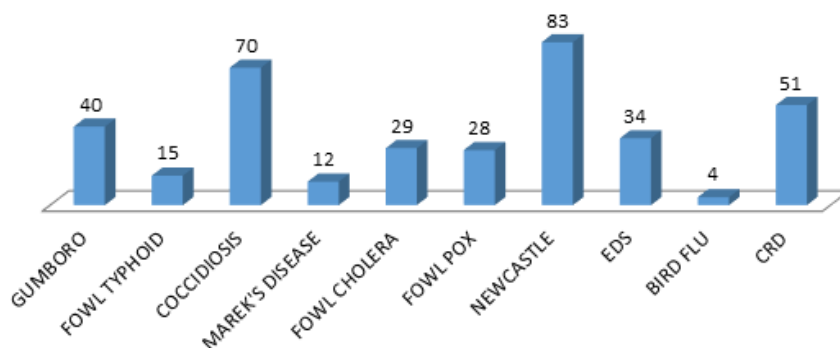


Figure 4: Disease prevalent in commercial poultry farm surveyed (Source: Field Survey, 2020)

Discussion

From the result obtained from this survey as shown in Table 1, 45.61% and 25.44% of the responded had 6 to 10 and 11 to 15 years of experience in poultry farming, this outcome corresponds with the findings of Bello *et al.* (2017) who reported that farmers who established their poultry farm between 5 to 10 years ago has the highest percentage in Ogun State. This outcome was attributed to emergence of new poultry farms in the study area because the outbreak of Bird Flu (Avian Influenza) in the state some 15 years ago closed down many farms (Timothy *et al.*, 2011). All poultry farmers in the study area are literate with minimum of primary school education as presented in table 1. This outcome is similar to the findings of Bala *et al.* (2012) that reported that the respondents in the surveyed area were literates and well enlightened about predominant poultry diseases found within the study area. Figure 2 reveals that poultry farms with flock size between 1001 to 5000 is predominant in the study area. This result differs from the report of Bello *et al.* (2017), Adene and Ogunade (2006) who reported that small scale farmers are predominant in Ogun State because of increase in backyard poultry farms in Nigeria. This difference may be because this study focused on commercial poultry farming. The outcome could also be due to the influence of the

recently ban on importation of poultry product into Nigeria which have encourage poultry farmer to increase their stock to meet the country's local demand. Table 2 shows the distribution according to type of poultry bird reared and management system. The result shows that most farmers raised layers only in Yewa South (69.3 %). This is in agreement with findings by Bello *et al.* (2017) and Maduka *et al.* (2016) that layers constituted the highest proportion of chickens in their study areas. This study also revealed that intensive system of management is commonly practiced in the study area (87%) which corroborates with the result obtained by Ukashatu *et al.* (2012) who had 84% farms practicing intensive farming in Katsina metropolis. About 80% of DOC were obtained from commercial hatcheries which is in accordance with the results of Bello *et al.* (2017) and Maduka *et al.* (2016) who had highest numbers of DOC sourced from commercial hatcheries in their respective study. Majority of the respondent (85.1%) buy commercially formulated feed. Similar result was obtained by and Maduka *et al.* (2016) and the report showed farmer preference for commercial feeds to on-farm feed preparation which may be as result of better feed efficiency and cost effectiveness with commercial than on-farm feeds. In this study, as seen in figure 4, Newcastle disease

is the most prevalent disease followed by Coccidiosis and Chronic respiratory disease. The result is in support with the findings of Bala *et al.* (2012) and Bukar-Kolo *et al.* (2004) who reported that Newcastle disease is more prevalent in Nasarawa (100%) and Gombe (14.66%) states, Nigeria. Also, Adene and Oguntade (2006) reported Newcastle disease as one of the major diseases of poultry that have been predominantly identified in commercial poultry by farmers in Nigeria. Report by Bello *et al.* (2012) also revealed that Ogun State had high prevalence of Newcastle disease. Another study by Timothy *et al.* (2011) reported ND to be more common in layers than broiler chickens which support the report from this study with high number of layer chicken and high prevalence of Newcastle.

Conclusion

From the study, it showed that that Newcastle disease is the most prevalent of the probable disease. The high prevalence of Newcastle may be due to improper handling of vaccines leading to either vaccine failure or vaccine break. The paralysis, anorexia, drop in egg production, greenish diarrhea high frequency could be associated with Newcastle disease infection.

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