

## Research Article

## Assessment of the Knowledge, Attitude and Compliance of Poultry Workers with Preventive Measures for Poultry Diseases in Sokoto Metropolis

Mera UM\* and Adenrele MJ

Department of Veterinary Medicine, Faculty of Veterinary Medicine, Usmanu Danfodiyo University, Sokoto

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**Abstract:** This study was conducted on 160 poultry farmers in Sokoto state, Nigeria with the use of questionnaire to assess the knowledge, attitude and compliance of poultry workers with preventive measures for poultry diseases in six Local Government Areas of the State. Information obtained from respondents showed that about 82.5% knows about poultry disease with 3.3% through newspaper, 1.5% television, 1.5% friends and 84.9% experience. The most common poultry disease known was Newcastle disease (41%) followed by Gumboro (40%) and coccidiosis (31.9%) among others. Also 60.6% of the respondents have heard about poultry disease outbreak with Avian Influenza having the highest frequency of 63.9%. Only 39.4% had ever experience an outbreak on their farm while 32.5% had never experienced it. Out of all the respondents 46.3% received lectures or training on poultry diseases often and 30% do not. Disease prevention methods employed in both commercial farms and backyard ones includes vaccination (82%), medication (71%), sanitation (43%), disinfection (10.6%), use of foot dip (60.6%), use of farm personnel clothing (59.4%), isolation of sick birds (88.1%). 48.1% of the farmers had their farms free of wild birds (vectors) while the rest had invasions. Twenty-one point nine per cent of the respondents disposed carcasses in refuse dump while 31.9% preferred to bury poultry carcasses. Finally, it was concluded that, the low level of commercial poultry production in the study area might be due to poor practices by the farmers. So, it is recommended that, government should put program about training poultry farmers on biosecurity, disease prevention and adoption of modern husbandry practices suitable for both commercial poultry production system and backyard poultry production system.

**Keywords:** Poultry, Chicken, Disease, Prevention, Avian, Sokoto, Nigeria.

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## INTRODUCTION

Nigerian poultry population is estimated to be 137.6 million, with backyard poultry population constituting 84% (115.8 million) and 16% (21.7 million) of exotic poultry [1]. The distribution of chicken population in Nigeria revealed that 84.5% of local chickens are found in Northern state of the country. On the other hand, 83% of exotic breeds are found in southern part of the country [2]. Agricultural sector remains the largest contributor to the Nigerian economy, accounting for over 38% of the non-oil foreign exchange earnings, and employing about 70% of the active labor force of the population. The poultry sub-sector is the most commercialized of all the sub-sectors of the Nigeria's agriculture [1], with a higher percentage of this poultry raised for subsistence production [30]. This category of birds represents a significant part of Nigerian rural economy in particular and of the national economy as a whole and are kept under the extensive management system [4]. Flocks

usually consist of cocks, Hens and chicks. In some households other poultry species are also kept in the same compound. Neighbouring flocks are allowed to mix freely and a cock may service several flocks [5].

In spite of the significance of the poultry industry to the national economy, poultry farming faces challenges inimical to the growth of the industry. Poultry production in general is faced with low capital base, inefficient management, disease and parasite, housing and marketing problems [6]. Diseases remain one of the major threats to boosting poultry production in Nigeria [1].

Poultry disease management involves taking steps to ensure good hygiene and increasing the standards of cleanliness as well as containment to reduce the risk of introducing disease into a flock. It involves biosecurity practices, medication, and mitigation [7]. Application of standard biosecurity measures is vital in protecting poultry birds from any

disease [8]. Biosecurity has focus on maintaining or improving the health status of animal and preventing the introduction of new disease pathogens by assessing all possible risks to animal health [9].

## MATERIALS AND METHODS

An open ended structured questionnaire was protested and later administered to 160 respondents that engaged in backyard poultry or commercial farm. Using the questionnaire, information about their literacy level, husbandry practices, biosecurity measures, and common diseases observed disease preventive measures and method of handling sick and dead birds were obtained from each respondent. Data generated were exported to Statistical Package for Social Sciences (SPSS®) version 17 [10] and were analyzed, using descriptive statistics to calculate frequencies and percentages.

The data was collected through the use of modified questionnaires designed based on the assessment of the knowledge, attitude and compliance of poultry workers with preventive measures for poultry Diseases in poultry farms. The research was conducted within six Local Government Areas of the State which are as follows:

- Sokoto north Local Government
- Sokoto south Local Government
- Dange Shuni Local Government
- Wamakko Local Government
- Kware Local Government
- Bodinga Local Government

The questionnaires were administered by visitation to commercial poultry farms and some backyard poultry farms within the six Local Government areas (Sokoto-North, Sokoto-South, Dange Shuni, Wamakko, Kware and Bodinga LGA). The various farm owners, farm managers, farm product marketers, farm laborers, farm security men filled the questionnaires, and some were guided appropriately. It was also administered to backyard farmers in their different houses with appropriate guidance. The data collected from poultry farms was carefully analyzed. The result of the assessment was calculated based on percentages

## RESULTS

The response rate to the questionnaires was 100%. About 80% of the respondents were male and 15.6% were female while 4.4% did not indicate. Also, 14.4% of the respondents had no formal education, 18.1% had Islamic education, 8.1% had primary education, 10.6% had secondary education and 48.8% had tertiary education. Most of the respondents were laborers in the farm (36.9%) while the rest were security men (5%), product marketers (4.4%), managers (13.5%) and owners (30%) of which 17% did not

respond. (Table1). About 37.5% of the respondents had broilers only, 12.5% had layers only, 3.1% had cockerels only, and 42.5% had mixed birds (layers, broilers and cockerels) with 36.2% being battery cage and 56.3% deep litter (Table 2).

About 82.5% knows about poultry disease with 3.3% through newspaper, 1.5% television, 1.5% friends and 84.9% experience. The most common poultry disease known was Newcastle disease (41%) followed by Gumboro (40%) and Coccidiosis (31.9%) among others. Also 60.6% of the respondents have heard about poultry disease outbreak with Avian Influenza having the highest frequency of 63.9% (Table 3). Only 39.4% had ever experience an outbreak on their farm while 32.5% had never experienced it. Out of all the respondents 46.3% received lectures or training on poultry diseases often and 30% do not (Table 4).

Disease prevention methods employed in both commercial farms and backyard ones includes vaccination (82%), medication (71%), sanitation (43%), disinfection (10.6%), use of foot dip (60.6%), use of farm personnel clothing (59.4%), isolation of sick birds (88.1%). 48.1% of the farmers had their farms free of wild birds (vectors) while the rest had invasions. Twenty one point nine per cent of the respondents disposed carcasses in refuse dump while 31.9% preferred to bury poultry carcasses (Table 5). Greater percent (73.8%) of the respondents knows and visit veterinary clinic for treatment or advice most often.

**Table-1: Demographic Distribution of Poultry Farmers by Sex, Literacy Level and Staff Category**

Factor	Frequency N=160	%
<b>Sex</b>		
Male	128	80.0
Female	25	15.6
Nil	7	4.4
<b>Literacy level</b>		
Islamic education	29	18.1
Primary education	13	8.1
Secondary education	17	10.6
Tertiary education	78	48.8
None	23	14.4
<b>Staff category</b>		
Security	8	5.0
Laborer	59	36.9
Product marketer	7	4.4
Manager	21	13.1
Owner	48	30.0
Nil	17	10.0

**Table-2: System of Farming and Type of Birds**

Factor	Frequency N= 160	%
<b>System of farming</b>		
Deep litters	90	56.3
Battery cage	58	36.2
Others	12	7.5
<b>Types of birds</b>		
Broilers	60	7.5
Layers	20	12.5
Cockerels	5	3.1
Mixed	68	42.5
Nil	7	4.4

**Table-3: Knowledge of poultry disease and disease outbreak**

Factor	Frequency=160	%
<b>Knowledge of poultry disease</b>		
Yes	132	82.5
No	14	8.75
Nil	14	8.75
<b>Medium(if yes)</b>		
Newspaper	3	2.3
Television	2	1.5
Friends	2	1.5
Experience	112	84.84
Nil	13	9.84
<b>Common diseases</b>		
Newcastle disease	67	41.9
Gumboro	64	40
Coccidiosis	51	31.9
Avian Influenza	11	6.9
Salmonellosis	11	6.9
Chicken pox	12	7.5
CRD	40	25
<b>Knowledge of disease outbreak</b>		
Yes	97	60.6
No	32	20.0
Nil	31	19.4
<b>Disease outbreak</b>		
Avian Influenza	62	63.9
Gumboro	9	9.3
Newcastle Disease	8	8.2
Others	18	18.6

**Table-4: Lecture on Poultry Diseases and Frequency of Outbreak**

Factor	Frequency=160	%
<b>Lecture on poultry disease</b>		
Yes	74	46.3
No	48	30
Nil	38	23.7
<b>Experience of outbreak</b>		
Yes	63	39.4
No	52	32.5
Nil	45	28.1

**Table-5: Prevention Methods, Carcass Disposal Method and Knowledge of Veterinary Clinic or Hospital**

Factor	Frequency=200	%
<b>Disease prevention methods</b>		
Vaccination	132	82.5
Medication	115	71.9
Sanitation	70	43.8
Use of foot dip	97	60.6
Use of farm clothings	95	59.4
Screen entry	86	53.8
Disinfection	17	10.6
Isolation of sick birds	141	88.1
Absence of wild birds	77	48.1
<b>Method of carcass disposal</b>		
Bury	51	31.9
Burning	32	20.0
Refuse dumping	35	21.9
Consumption	8	5.0
Others	10	6.2
Nil	24	15
<b>Knowledge of Vet. Clinic</b>		
Yes	118	73.8
No	17	10.6
Nil	25	15.6
<b>Clinic/hospital(if yes)</b>		
State vet. Clinic	98	83.1
VTH	16	13.6
Others	3	2.5
Nil	1	0.8

## DISCUSSION

The major economic activity of the people of Sokoto State is agriculture and this engages over 80% of the population. The poultry industry is characterized majorly by backyard, small scale or medium scale commercial production system and a growing area of large commercial system. Majority of the respondents were male (80%) followed by female 15.6%. This is because most of the women in the study area engaged in rearing small ruminants, while male engaged in cattle and poultry production. However some reports showed that the poultry industry in rural areas is largely in the hands of women and children as they own or manage the rural poultry [11- 13]. Sanitation to some extent is poor (43%) and these have serious implications on the spread of contagious diseases by people as well as being of public health importance regarding zoonoses such as highly pathogenic avian influenza. A great per cent of the farmers dispose carcasses at refuse dump (21.9%) and some even consume it (5%) by implication, this may lead to the spread of infection to wild birds, domestic free roaming birds, cats, dogs and man by feeding on these dead birds, thereby encouraging the spread of infections to both humans and animals. During the dry season, dust can be a problem due to accumulated dry faeces and fine dust aerosols which could easily transmit airborne

respiratory diseases or cause stress to the respiratory mucosa of birds housed in such premises [14]. Lack of cleaning and hygiene could predispose birds to external parasites, which cause harm, discomfort, stress and act as intermediate hosts for various diseases [15]. On the other hand, accumulated faeces in unclean premises with lack of ventilation could result in ammonium toxicity during the humid wet season, causing impairment of the respiratory system and predisposing birds to infectious respiratory diseases [14] like Newcastle Disease (41.9%), Gumboro (40%), CRD (25%).

The result of this study revealed that a reasonable number of respondents (73.8%) are familiar with veterinary clinic of which 83.1% visit the state veterinary clinic and 13.6% visit the university veterinary teaching hospital.

## CONCLUSION

The study shows some encouraging findings with regards to disease prevention such as vaccination (82.5%) and also on treatment of sick birds however some important issues such as disinfection (10.6%) are highly neglected by the poultry rearers in the study area. There is the need therefore for creating awareness by the agencies concern such as the Veterinarians, Local authorities and civil societies organizations involve in poverty alleviation to help in reducing losses to diseases by farmers.

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