ASSESSMENT OF BIOSECURITY MEASURES OF COMMERCIAL POULTRY FARMS IN ADO-ODO/OTA LOCAL GOVERNMENT AREA

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ABSTRACT
Biosecurity measures of commercial poultry farms in Ado-Odo local government area, Ogun State, Nigeria was appraised to determine the level of practice using well structured questionnaire. Data were gathered on distance between farms and potential disease transmission threat of commercial poultry farms, level of hygiene of the farms, flock health care and management practices of commercial poultry farms in the study area and analyzed using descriptive statistics in percentage. Result revealed that 70.62% of commercial farms maintained a good distance between their farms and potential disease threats. Only 72.81% of farms in the study area practiced good hygiene while 27.19% did not. The result also revealed that 81.08% of farmers practice good flock health care and 74.9% of the farmers practiced good poultry management on their farms while 25.1% did not have good poultry management practice. The study concluded that biosecurity measures practised in the study area at the various levels of practice were reasonable and this was reflected in high level of positive (yes) findings relative to the low level of negative (no) findings in the study. However, farmers were enjoined to improve on the farm biosecurity because the closer the farm biosecurity to 100% the better.

Keywords: Biosecurity, commercial poultry, disease

INTRODUCTION

Poultry is considered a good source of animal protein in the human diet. It is an important source of protein presently producing about 36.5% of total intake of Nigerians (Okunola, et al., 2007) but it is insufficient for human consumption due to the prevalence of diseases like New Castle disease which has been reported as one of the greatest constraints to the development production (Dipeolu et al., 1998; Akinleye, 2011).

Disease is any disturbance and departure from the normal functioning of the body of an organism that has a specific cause, show signs or symptoms peculiar to the disease which makes it easily identified in case of an outbreak. Poultry diseases are diseases common to poultry. These are any disturbances or malfunctioning in the body system of poultry. It is often considered a clinical condition which has a cause, shows signs and symptoms and can be prevented, treated or controlled.

On February 2006 the Government of Nigeria confirmed the presence of Highly Pathogenic Avian Influenza (HPAI) disease caused by the virus strain H5N1 in the country and between February 2006 and October 2007. A total of 1.3 million birds were desolated resulting in high economic lost of N560 million (approx. US$4.5 million). Also, in terms of spatial distribution, HPAI was officially confirmed in 97 LGAs in Adamawa, Anambra, Bauchi, Benue, Borno, Edo, Enugu, Kaduna, Kano, Katsina, Kwara, Lagos, Nasarawa, Niger, Ogun, Oyo, Plateau, Sokoto, Rivers, Taraba, Yobe, Zamfara, Ekiti and the FCT (Timothy et al., 2011)

Disease prevention and control therefore, are series of activity embarked upon to
disallow the introduction and spread of diseases such as Highly Pathogenic Avian Influenza (HPAI), Marek’s Disease, Salmonellosis, Infectious Bronchitis, Egg Drop Syndrome (EDS), Avian Tuberculosis, Fowl Cholera (Pasteurellosis), Infectious Bursal Disease (Gumboro), Infectious Coryza, and other poultry diseases on the farm and incase of an outbreak, to be able to identify the disease, the cause and the possible control measures to put a stop to the spread of the disease (UNDP, 2006; FAO, 2008).

Disease prevention and control is not achievable without good biosecurity practices (FDLPCS, 2007), a set of activity designed to give adequate protection to the health condition of a flock, the people that take care of the flock and various consumers of their products. Biosecurity is also the practices that help ensure that on-farm visits are monitored under strict monitoring principles so as to minimize to the barest minimum the introduction of poultry disease onto the farm by visitors. It ensures that flocks are monitored to ensure other farm animals do not come in contact with poultry birds on the farm. Biosecurity is practiced at various levels, all of which must be strictly adhered to by everyone involved in the poultry production enterprise in order to reap maximally from investment among other benefits.

The primary purpose of any enterprise is to maximize return on investment over long term. Poor or lack of biosecurity could be disastrous on the farmer/producer, consumer and undoubtedly, exponential consequence on the national economy. For example, the outbreak of HPAI in 2006/2007 in Nigeria gave a big blow to the operators in the industry (FDLPCS, 2007). Therefore, commercial poultry farmers in particular cannot but practice biosecurity as it is the most effective and cheapest means of preventing introduction and disease outbreak on the farm in order to maximize profit.

In spite of the laudable advantages of biosecurity, there seems no developed and maintained database of large-scale commercial farms in Ogun state in particular and Nigeria in general. Also there is daunt of information on appraisal of biosecurity which could serve as early warning system to commercial poultry farmers in Ado-Odo/ Ota local government area, the main hub of poultry production in Ogun State and this therefore necessitated this study.

MATERIALS AND METHOD
The study was carried out at Ado-Odo/Ota/Ota Local Government Area of Ogun State. The area is one of the twenty Local Government Areas of Ogun State, Nigeria. Ado-Odo/Ota borders on Ipopia Local Government to the west, Yewa South Local Government to the north, Ifo Local Government to the north east area within Ogun State and also borders on metropolitan Lagos to the south east. The area is known for its large number of commercial poultry farms due to its proximity to Lagos State, the commercial nerve centre of the country and harbours major air and sea ports in Nigeria (Figures 1a&b).

Data Collection and Analysis
Data was randomly collected from eighty two (82) commercial poultry farms (Figure 2) using a structured questionnaire. The questionnaire was a ninety seven (97) “Yes” or “No” answer type which cut across distance between commercial poultry farms and disease transmission treats e.g. my farm is more than a kilometer from a standing body of water (pond, lake) as the crow flies, the next poultry farm is 1.5km or more away, the processing plant is a 1.5km or more away, the main route by which trucks travel to the processing plant is a 1.5km or more away, the nearest rendering facility is a kilometre or more away and potential disease transmission threat.

Level of hygiene of commercial poultry farms e.g. shower before going out to work in the poultry houses, I do not wear street
clothes or shoes in the poultry houses, I have a separate cap and pair of coveralls for each house and or each brooder and finisher unit, I regularly launder my caps and coveralls, especially between flocks, I have a separate pair of boots for each house and or brooder and finisher unit etc.

Figure 1a: Map of Ado-Odo/Ota LGA within Africa Region

Data were also collected on flock health care of the farms in the study area and this include sick or dead birds are regularly examined (posted) to determine if infectious agents may be responsible for the problem, birds are routinely bled to determine if any infectious agents may be present on the farm, birds are only vaccinated for agents known to have caused problems on the farm in the past, when using vaccines, I always follow the manufacturers' instructions, I only use antibiotics when birds are sick, I always administer antibiotics according to the dosage listed on the label or according to

Figure 1b: Map of Ado-Odo/Ota and location of Farms as a subset of Ogun State

Figure 2: Location of respondents commercial Farms in Ado-Odo/Ota Local Government Area
the instructions of a veterinarian among others.

Also was the management practices of commercial poultry farms in the study area like I follow the temperature guidelines prescribed by the company, if the birds look chilled, I supply more heat without compromising air quality, I routinely remove caked litter or till according to company recommendations, I use a chlorinator or some other means to reduce bacterial contamination in my water, I raise feeders and waterers at the appropriate time to reduce wastage and litter contamination.

Data collected were analyzed using descriptive statistics and percentage. The number of “Yes” or “No” marked for each question was determined and expressed relative to the total outcome in percentage.

Arithmetic model:

\[
\text{YES} (%) = \frac{X}{X+Y} \times 100 \quad \text{........................(1)}
\]

\[
\text{NO} (%) = \frac{Y}{X+Y} \times 100 \quad \text{........................(2)}
\]

Where \(X\) represents number of “Yes”,
\(Y\) represents number of “No”.

Average proportion was further determined under each section using the model

Average YES (%) = ............ (3)

Average NO (%) = \left(\sum_{i=1}^{n} NO(\%)\right) / n \quad .......... (4)

Where \(n\) represents number of queries under each section.

RESULTS

Distance between commercial poultry farms and potential disease threat

Result revealed that 70.62% of commercial farms maintained a good disease between their farms and potential disease threats while 29.38% did not (Figure 3). This suggested a moderate trend in preventing poultry diseases that can easily be transmitted within a short distance and from potential disease threats (Timothy et al., 2011). The biosecurity practice of distance between commercial poultry farms and potential disease threat in Ado-Odo/Ota Local Government Area could be described as a stop and go practice. Timothy et al. (2011) described a level between 58-79% as moderate biosecurity therefore commercial poultry in the study area operated moderate biosecurity of distance between farms and potential disease threats.

Figure 3: Distance between commercial poultry farms and potential disease threat in Ado-Odo/Ota Local Government Area
Figure 4 shows that majority (72.81%) of commercial poultry farms in Ado-Odo/Ota Local Government Area practiced farm hygiene while 27.19% of farms in the area did not. The result also revealed a moderate level (72.81%) of hygiene biosecurity practice among commercial farmers in the study area. Hygiene level of commercial poultry farms in Ado-Odo/Ota Local Government Area still suggested a stop and go biosecurity practice among farmers. The nearer the farms and area to 100%, the better the biosecurity of the area in general and the farm in particular (Timothy et.al. 2011: Pierson, 2011).

![Figure 4: Level of hygiene of Commercial Poultry farms in Ado-Odo/Ota Local Government Area](image)

Flock health care practices on commercial poultry farms
The study also revealed that 74.9% of the farms in Ado-Odo/Ota Local Government Area practiced good poultry management on their farms while 25.1% of the farmers did not. Good management practices of 74.9% among commercial poultry farms implied a moderate level of practice in the study area. Good management practices aid production, technical and economic efficiencies in commercial farms and should be strictly and continuously adhered to for efficient production. Farmer(s) must learn to manage farm with insecurity measures properly and adequately practiced to keep farm in good operating condition. At less than 30% level of practice, insecurity is minimal and birds may be assumed for local market and consumption only. This is not encouraged in commercial poultry production and farmers should guide against it.

Management practices of commercial poultry farms.

Figure 5: Flock health care practices on commercial poultry farms in Ado-Odo/Ota Local Government Area

*Figure 4: Level of hygiene of Commercial Poultry farms in Ado-Odo/Ota Local Government Area*
CONCLUSION

The study concluded that distance between farms and potential disease threat, level of hygiene, flock health care and management practices of commercial poultry farms in the study area was reasonable in view of the high level of positive findings relative to the low level of negative findings in the study. However, commercial poultry farmers in Ado-Odo/Ota Local Government Area are enjoined not to relent on their efforts as the closer they are to 100% the better for them and their farms.

REFERENCES


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