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**AN ASSESSMENT OF BIO-SECURITY STATUS OF POULTRY FARMS IN MUBI ZONE OF ADAMAWA STATE, NIGERIA****\*<sup>1</sup>Augustine C., <sup>2</sup>Mojaba D.I. and <sup>3</sup>Igwebuike J.U.****\**Department of Animal Production, Adamawa State University, Mubi, Nigeria******Department of Animal Science, University of Maiduguri, Maiduguri, Nigeria*****ABSTRACT**

A survey was conducted to assess the bio-security status of poultry farms in Mubi zone of Adamawa state Nigeria. One hundred poultry farms were purposely sampled and visited. Questionnaires, bio-security assessment forms and farm inspection were used as instruments for data collection. Simple descriptive statistics using frequencies and percentages were used to summarize and present results. The results revealed that 92% of the respondents keep poultry as source of income and 86% practice the intensive management systems. The predominant source of labour (68%) was family labour. Majority of the farmers (89%) depend on commercial feeds. The poultry industry in Mubi zone is dominated by chicken (84%). Greater proportions of the farmers operate backyard or small scale medium farms. The result of the bio-security status of farms in Mubi showed that bio-security in facilities, hygiene, vaccination, water quality control check and education standards were not well observed by farmers in Mubi zone. The results of symptoms of poultry disease observed by farmers in Mubi zone revealed that faeces stained with blood accounted the highest (39%) followed by whitish diarrhoea (16%) and yellowish diarrhoea (8%). It is therefore recommended that bio-security be given top most priority in the poultry sub sector. Government should support the implementation of bio-security at all levels of the livestock subsector. Government should support farmers financially in order to boost poultry production in Mubi.

**Keywords: Assessment, Bio-Security, Status, Poultry farms, Mubi zone.**

**INTRODUCTION**

The importance of poultry production to the biological needs, economic and social development of the people of any nation cannot be over emphasized. (Oladeebo and Ambe, 2007). The poultry industry has become a popular means of alleviating poverty in Nigeria. The growth and the development of the industry in Nigeria are being threatened by the outbreak of diseases such as new-castle disease, highly pathogenic avian influenza (HPAI) etc. Some of the diseases such as avian influenza posed some health hazards on humans. It is also important to note that, today's consumers are generally more health conscious and react strongly to perceive safety issues associated with consumption of products of animal origin (Garri, 2009). In view of the above, it has become imperative to give priority to poultry health management through the implementation of sound bio-security measures especially in under developed nations that are already battling with the scourge of poverty, HIV and other social problems. The implementation of sound bio-security measures will go a long way in minimizing the problems of disease outbreak and spread in the Nigerian poultry industry and also maintain consumers' confidence in Nigerian poultry products. Little or no work has been done in assessing the bio-security status of poultry farmers in Mubi region of Adamawa state, Nigeria. This study, therefore attempted to assess the bio-security status of poultry farms in Mubi region of Adamawa state, Nigeria.

## **MATERIALS AND METHODS**

**Location of the study area:** The study area is situated within the north eastern guinea savannah of Nigeria. The area is located between longitude 13° and 13° 45' east and latitude 11 and 9 30'north (Adebayo, 2004).

**Sampling techniques and data collection:** one hundred (100) poultry farms were purposely sampled for visitation and collection of data. One hundred structured questionnaires and bio-security assessment forms were used for the collection of data. Each selected farm was visited and the questionnaire and bio-security assessment forms were used to obtain information from the farmers and inspection of farm facilities were also used as an instrument for data collection.

**Data analysis:** Data obtained were analysed and summarised in tables using simple descriptive statistics (frequency distribution and percentages).

## **RESULTS AND DISCUSSION**

The result of purpose of keeping poultry, management system and source of labour used to manage poultry in Mubi zone of Adamawa state are presented in Table 1. The results revealed that 92% of the poultry farmers keep poultry as source of income. This finding is in line with the report of Ja'afar Furo (2007) who in a similar study found that majority of poultry rearers keeps poultry as source of income. This is a clear indication that poultry enterprise in Mubi could contribute to employment and income generation in the area.

The result of management system in Mubi showed that the intensive system is the predominant (86%) system adopted by farmers. This result agreed with the findings of Ja'afar Furo, *et al*, (2007) who in a similar study reported that 82.5% of the farmers practiced intensive poultry management system in Adamawa state. Reasons for more adoption of intensive system may be due to the high productivity associated with intensively reared birds and minimal lost of birds due to theft.

The result of the source of labour indicated that, family labour accounted for the highest (68%) source of labour used to manage poultry in Mubi area. There is clear evidence that most farmers operate small scale or backyard poultry production that could be managed at family level just to generate income for the family.

The result of average prices of poultry products in Mubi zone is shown in table 2. The result pointed out that a life broiler chicken is sold at an average of ₦1033.34k, while a kilogram is sold at ₦521.66, life spent layer chicken at ₦699.75, kg of spent layers at ₦339.48 and a crate of egg is sold at ₦689.46. Poultry manure is given out to crop farmers or used on personal farms. The result also showed that birds are sold on kg or live bases. The marketing of dressed birds is very rare in Mubi area. This is due to problems of preservation facilities and poor power supply.

The result of the species of poultry and numbers reared in Mubi zone is shown in Table 3. The result revealed that poultry enterprises in mubi area are dominated by chicken (84%). This is in agreement with the report of (Dafwang, 2002) who reported that the Nigerian poultry industry is dominated by the

local chicken. This also indicated that chicken products are highly acceptable by people in the area. The result of average number of type of poultry kept by farmers showed that layer chickens have more population followed by broiler chickens. This shows that, there is more demand of chicken eggs than the meat. The result also indicated that most farmers operate backyard or intensive poultry.

The result of type of feed used by farmers is shown in Table 4. The result indicated that majority of the poultry farmers (89%) depend on commercial feeds to feed their birds. This factor, has contributed to increased cost of rearing poultry in Mubi zone which invariably reduce the profit margin of farmer in the area.

The result of bio-security status of farms in Mubi zone is presented in table 5. The result of facility standard showed that 69% of the farms are fenced while 31% are unfenced. This clearly shows that majority of the poultry houses are located inside fenced residential houses. The closeness of the poultry farms may be due to easy access to the farm and also to provide security to the farms through family vigilance. This practice does not comply with bio-security policy of sitting animal farms and may encourage inter transmission of disease between humans to birds or vice-versa.

Reasonable number of farms (54%) had no foot dips at entrances. The implication is that most of the farms stand the risk of encountering outbreak of diseases because the restriction of pathogens into poultry houses is very minimal.

Some of the farms inspected (47%) had no rodent proof while 53% had rodent proof.

This is evidence that many farmers in the area are conscious of rodents and predators that may harm their birds. Some of the feed store inspected (58%) had facilities to prevent rodents into the store while 42% had no facilities to prevent rodents into the house. It also signifies that farmers in the area are careful about rodents that may destroy poultry feeds that are costly to purchase in the area and not an intention to observe of bio-security measure.

Greater proportions of the farms (72%) are located close to the residential houses. It therefore means that both poultry birds and humans are at risk of transmission of has a lot of hazards on both zoonotic diseases such as high pathogenic avian influenza which humans and poultry birds. Majority of the farms (67%) in Mubi had provision for good ventilation with only 33% having poor ventilation. The provision of good ventilation is an attempt by farmers to reduce the effect of heat stress that has been one of the environmental problems in the area.

The result of hygiene standards indicated that 45% of the farms had better litter management while 55% had poor litter management. Many farmers (65%) showed better hygiene practices of washing drinkers on daily basis. Some of the farmers (42%) rarely observed the practice of cleaning, disinfection and allowing the house to rest for at least two (2) weeks before restocking while 58% are adamant about the practice. The result of vaccination record of the poultry farms in Mubi pointed out that 40% of the farms had vaccination record while 60% had no vaccination record. However, some of the farmers contacted claimed to have vaccinated their birds. It therefore revealed poor attitude of the farmers towards keeping medical records of their flocks.

None of the farms (0%) visited had a quality control check on the birds drinking water. The issue of water quality control for birds in Mubi area is just mirage. Even drinking water for humans had no quality control. This is due to lack of facilities and poor attention by government to really give priority to quality control for drinking water.

A total population of 51% of the farmers contacted were educated on farm bio-security with 41% showing ignorance. There is therefore need to intensify effort to educate more farmers about farm bio-security in Mubi area.

The results of some common symptoms of poultry diseases observed by farmers in Mubi zone is shown in Table 6. The result revealed that symptoms of faeces stain with blood recorded the highest (39%) followed by whitish diarrhoea (16%) and yellowish diarrhoea (8%). It therefore shows that cases of coccidiosis and salmonella infection are very common in the area. This may be attributed to likely poor litter and hygiene management.

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### **CONCLUSION**

Results of this study clearly showed that bio-security measures in the entire standard considered were not well adhered to by poultry farmers in Mubi zone of Adamawa state, Nigeria. Poultry farmers in the zone operate small scale or backyard poultry farms which basically serve as a source of income for the family. There is need to intensify enlightenment campaigns on the significance of bio-security in Mubi area. Government should endeavour to invest in livestock bio-security considering the health hazards that are associated with livestock diseases. Nigerian government should therefore come up with financial policies that will facilitate the establishment and expansion of more poultry farms in Mubi area. This will generate more employment and make available poultry products for people.

**Table 1: Poultry Management Systems in Mubi Zone Adamawa State, Nigeria.**

<b>Purpose of keeping poultry</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Income	92.00	86.00
Family utilization	7.00	14.00
Hobby	1.00	0.00
<b>Management systems</b>		
Intensive	86.00	86.00
Semi-intensive	14.00	14.00
Extensive	0.00	0.00
<b>Source of labour</b>		
Family	68.00	68.00
Hired	32.00	32.00

**Source: Field survey (2010)**

**Table 2: Average Prizes of Poultry Products in Mubi Zone Adamawa State, Nigeria.**

<b>Type of product</b>	<b>Average price (₦)</b>
Live broiler chicken	1033.34
Per kilogram of broiler chicken	521.66
Live spent layer chicken	699.75
Per kilogram of spent layer chicken	339.48
Crate of egg	689.46
Manure	Mostly given out or used on personal farms

**Source: Field survey (2010).**

**Table 3: Species of Poultry Reared in Mubi Zone Adamawa State Nigeria.**

<b>Species</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Chicken	83.00	83.00
Turkey	12.00	13.00
Ducks	4.00	3.00
Guinea fowls	1.00	1.00
Total	100.00	100.00
<b>Average number of birds reared</b>		
Broilers	306.11	
Layers	367.33	
Turkey	67.16	
Cockerel	133.5	

**Source: Field survey (2010).**

**Table 4: Types of Feeds Used by Poultry Farmers in Mubi Zone Adamawa State Nigeria.**

<b>Type of feed</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Commercial	89.00	89.00
Locally compounded	9.00	9.00
Others	1.00	1.00
Total	100.00	100.00

**Source: Field survey (2010).**

**Table 5: Bio-security Standards Used for Poultry Farm Assessment in Mubi Zone Adamawa State Nigeria**

<b>Standard facility</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Fenced farms	69.00	69.00
Unfenced farms	31.00	31.00
Farms with foot dip at entrance	46.00	46.00
Farms without foot dip at entrance	54.00	54.00
Farms with rodent proofs	47.00	47.00
Farms without rodent proofs	53.00	53.00
Farms with rodent proofs at feed store	58.00	58.00
Farms without rodent proofs at feed store	42.00	42.00
Farms close to residential houses	72.00	72.00
Farms not close to residential houses	28.00	28.00
Farms with good ventilation	67.00	67.00
Farms with poor ventilation	33.00	33.00
<b>Hygiene/vaccination</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Good litter management	45.00	45.00
Poor litter management	55.00	55.00
Washing of drinkers daily	65.00	65.00
Non-washing of drinkers daily	35.00	35.00
Proper cleaning, disinfection and rest to house before restocking	42.00	42.00
Farms with vaccination record	40.00	40.00
Farms without vaccination record	60.00	60.00
<b>Standard</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Non-proper cleaning, disinfection and rest to house before restocking	58.00	58.00
<b>Water quality control</b>		
Water quality control check	0.00	0.00
Non-water quality control check	100.00	100.00
<b>Education/enlightenment</b>		
Educated about farm bio-security	51.00	51.00
Non-educated about farm bio-security	49.00	49.00

**Source: Field Survey (2010).**

**Table 6: Some Common Symptoms of Diseases Observed by Farmers in Mubi Zone, Adamawa State Nigeria.**

<b>Symptom</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Yellowish diarrhoea	8.00	8.00
Whitish diarrhoea	16.00	16.00
Greenish diarrhoea	7.00	7.00
Faeces stained with blood	39.00	39.00
Paralysis	2.00	2.00
Twisting of neck and cyclic movement	5.00	5.00
Warms in faeces	8.00	8.00
Respiratory difficulties	3.00	3.00
Ecto-parasites on the body	6.00	6.00
Lesions on comb and wattle	6.00	7.00

**Source: Field Survey (2010)**

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