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Occurrence of Avian Influenza in Chickens in Nasarawa State, Nigeria

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Abstract: Avian Influenza is currently the most important constraint to the productivity of village and urban chicken flocks. Before January 2006, there were no reported cases of Bird Flu in Nigeria. Nasarawa State falls within the guinea savannah zone of North Central Nigeria. It is predominantly an agricultural state with an estimated chicken population of 3,750,000. At present, it is one of the few states in the country with an outbreak of Avian Influenza. The first incidence was reported in February, 2006 at Garaku in Kokona local government area of the state. This led to the culling of 9,242 local fowls and those of mixed breeds, Birds were also of mixed ages. Some of the clinical signs observed included, severe depression, swollen head and face, discoloured and swollen legs, ruffled feathers, staggering gait, broken eggs, nasal and oral cavity discharges and sudden death. The confirmatory test involving 6 samples was carried out in Padova, Italy. Nasarawa State Action Committee on Avian Influenza which was already in place swung into action to avert the spread of the disease. No case of human infection has been reported.

Key words: Chicken, wild birds, human, avian influenza, clinical signs, confirmatory test

INTRODUCTION

Chickens are important species playing a significant role in the stable development of Nigeria's livestock industry; thus promoting food self-sufficiency and improvement in the nutrition and health standard of Nigeria's teeming populace. Their population in the country is put at 72,400,856[1]. Of this, 86.17% are traditionally managed while 13.83% are managed commercially.

In recent time, poultry production is at risk as a result of the outbreak of avian influenza (bird flu) in the country. Nigeria has 24 wetlands and lies along 2 important Wild Birds migratory routes-the East Atlantic Flyway and the East Africa West Asia Flyway[2]. Highly Pathogenic Avian Influenza (HPAI) has been recognized as a fatal disease of poultry since its first description in Italy in 1901[3]. It is a highly infectious viral disease of domestic and wild birds that is characterised by high morbidity and mortality rate with respiratory and nervous signs. Bird Flu viruses are highly specific. Of the 3 types of viruses A, B and C having worldwide distribution, the one responsible for Bird Flu is the Avian Influenza type A viruses. Most outbreaks are caused by the highly pathogenic sub-types H5 and H7[4].

The host range of avian influenza in free-living birds is extensive and there may be no limit to the spectrum of avian susceptibility[5]. There have been reported cases in poultry and wild birds[6-8]. The disease is also transmissible to humans through the lethal A/H5N1 strain. Three pandemics were recorded in the last century. These were, Spanish influenza (1918), killing an estimated 40-50 million people worldwide; Asia influenza (1957), resulting to 2 million deaths; and Hong Kong influenza (1968), with about 1 million deaths recorded[9].

The present study focuses on the outbreak of Avian Influenza in Nasarawa State, Nigeria and the current efforts being made to address the scourge. It also proffers long-term solutions geared towards the prevention of the disease.

Etiology: There are 2 groups of Avian Influenza viruses based on severity to cause disease. These are the Highly Pathogenic Avian Influenza (HPAI) and Mildly Pathogenic Avian Influenza (MPAI) viruses. HPAI viruses do not have a recognized wild bird reservoir, but can occasionally be isolated from wild birds during outbreaks in domestic poultry. There is evidence that HPAI viruses arose from MPAI viruses through mutations in the haemagglutinin surface protein[10].

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Table 1: The outbreak of Avian Influenza in Nasarawa State

Name of disease	Date reported	Breeds of fowls infected	Age of fowls infected	No. of fowls culled	Location of farms	Clinical signs	Laboratory diagnosis	Human infect-ion
Avian Influenza	25/2/2006	Mixed breeds including the local fowls	Birds were of mixed ages.	9,242	Garaku in Kokona local government area of Nasarawa State.	Loss of appetite, severe depression, swollen head and face, discoloured and swollen legs, ruffled feathers, staggering gait, difficulty in breathing, bluish wattles and combs, broken eggs, diarrhoea, nasal and oral cavity discharges, sudden death, high mortality	The confirmatory test was carried out in Padova, Italy using 6 samples.	Therewere noreported cases

Source: NSACAI[12]

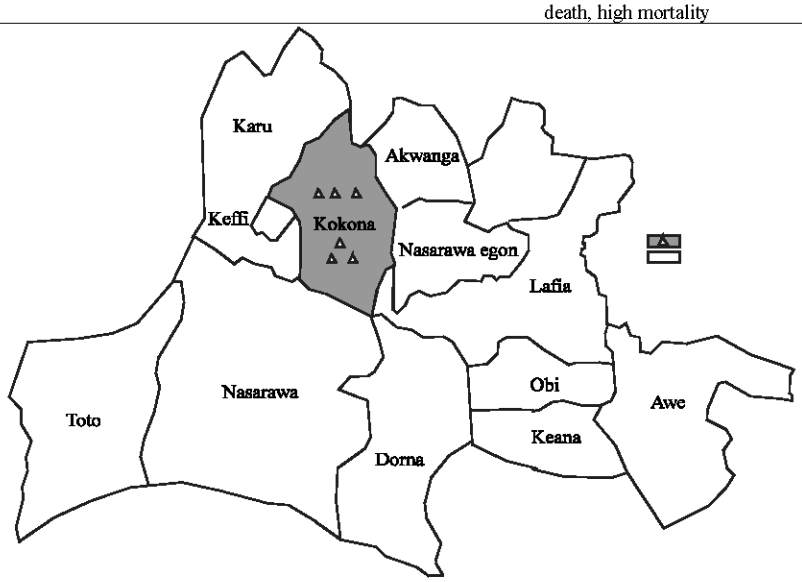

Fig. 1 : Map of nasarawa state showing avian influenza infectes

Transmission: The transmission of Avian Influenza could be as a result of direct contact with infected poultry, avian viruses contaminated environments, equipment, feeds personnel and vehicles moving into or out of contaminated premises. It could also be through intermediate host such as pig[2]. The spread of the disease into Nigeria could be through importation or smuggling of infected poultry and poultry products, and through migratory birds. Eggs laid in the early stages of AI infection could contain the virus on the egg yolk, albumen and egg shell.

Distribution of avian influenza in nasarawa state: Nasarawa State is predominantly an agricultural state with an estimated chicken population of 3,750,000[11]. However, the outbreak of Bird Flu at Garaku in Kokona, which is one of the 13 local government areas in the State (Fig. 1) is now a serious threat to livestock production. Table 1 shows the incidence of Avian Influenza in the State.

Efforts of the state government towards the prevention and control of avian influenza: In a swift reaction to the outbreak of Avian Influenza in Nasarawa State, the state government summoned the Nasarawa State Action Committee on Avian Influenza. The committee is working round the clock to ensure movement restriction of poultry and poultry products: depopulation of clinically infected farms with payment of compensation. This is done in conjunction with the Federal Ministry of Agriculture and Rural Development. It also ensures sanitary disposal of dead and destroyed poultry and contaminated poultry products according to standard operating procedures. It is equally charged with the responsibility of disinfecting and decontaminating affected premises, active disease surveillance to determine the extent of the infection; and effective public awareness campaign to elicit cooperation from large scale commercial and backyard poultry owners.

The activities of the committee are paying off as there have been no further reported cases or escalation of the disease.

CONCLUSION

Avian influenza epidemics have raised global public awareness of the threat of emerging infectious disease. Its occurrence in chickens in Nasarawa State constitutes a threat to livestock productivity. The current effort of the State government therefore, is a right step in the right direction towards curbing the menace.

RECOMMENDATIONS

In order to find a long-lasting solution to the outbreak of Avian Influenza, an emerging zoonotic disease, it is therefore recommended that:

- Efforts should be intensified towards the production of vaccines, using local isolates. This has been proved to be more effective compared with imported ones.
- There should be genetic improvement of native and exotic breeds of poultry through marker assisted selection.
- Regional biosecurity must take into account small flocks of indigenous poultry which are seen as a major risk factor for avian influenza outbreaks and other infections.

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