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SURVEY OF LOCAL CHICKEN DISEASES, THEIR CONTROL AND PREFERRED EXTENSION METHODS

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Abstract
A research was conducted on Local chicken (LC) production to assess the challenges facing by the farmers and adoption levels of biosecurity measures in selected areas of three senatorial zones of Plateau state, Nigeria. One hundred and twenty questionnaires were used and administered through a multi-stage random sampling methods. Data obtained from both primary and secondary sources were subjected to both descriptive and quantitative analysis. The results obtained showed that to disseminates information, most LC farmers in southern zone suggested the use of radio programs, while Central zone suggested organizing seminar for farmers and efficient extension services to Local chicken (LC) farmers and only few farmers in the Northern zone opted for used of churches and mosques as means of disseminate information's. Coughing/CRD and Fowl pox are the major LC disease in Northern, Southern and Central zones respectively, however, most of the farmers in the villages in the Northern zone uses local herbs as means of treatment of most of the diseases. The farmers in central zone buy veterinary drugs and treat sick birds themselves and only few farmers call veterinarian officer for treatments. The LC farmers faces problems because of prevailing constraints such as diseases, lack of veterinary medicine services available, weak extension support and training services and only few LC farmers in Plateau state practice biosecurity. Poultry health service and biosecurity should be improved to prevent the diseases for higher productivity.
Key words: Ecological chicken, farmers, biosecurity, diseases, control

INTRODUCTION
Ecological chickens are mostly owned and managed by resource poor farmers who are mainly women and children (Wachira *et al.,* 2009), who do not invest much, particularly in biosecurity measures to control diseases and parasites. Producers may choose not to implement biosecurity recommendations because of a lack of awareness about the potential risks to their farms and the industry as a whole. Among those who are aware of the potential risks belief that, benefits of implementing biosecurity measures do not outweigh the costs, (Moore *et al.,* 2008). Biosecurity measures are not well adopted despite being included in the extension packages. However, it requires the adoption of a set of attitudes and behaviors by people to reduce risk in all activities involving domestic, captive, exotic and wild birds and their products (FAO, 2008). The effective implementation of biosecurity measures will minimize the problems of disease outbreak and spread in the poultry industry and also maintain consumers" confidence in poultry products. In recent times, the productivity of Ecotype Chickens (EC) in Plateau State, Nigeria has stagnated, largely due to numerous constraints such as: - diseases, parasites, lack of adoption of biosecurity, inadequate knowledge and skills on EC husbandry, limited transfer and adoption of improved technologies by rural households. Investments aimed at improving EC production have not achieved desired outputs. No policy on livestock biosecurity in Nigeria. Recent reports from the department of veterinary services indicate that, chicken mortality is on the rise 70-80% (FAO, 2008). Measures must be taken if not chances of most of the ecological birds most go extinct such as the naked neck, frizzled, dwarf and normal. The farmers today see exotic breeds of chicken as the most profitable and socio-economic valued compared to the ecotypes/ecological chicken but that is not true, because these exotic chicken are not ecologically adapted to Nigeria climate thereby been prone/susceptible to disease and required strict attention of the breeder, though when well managed and scale through disease outbreak e.g. Newcastle disease (ND), it productivity is high and

likewise if these ecological chickens are well managed (fed well, intensively managed), open to improvement (cross breeding/hybridization) and adhere to strict biosecurity, our ecological chicken can give higher production with less expensive because they are hardy birds and are more resistant to diseases (naturally acquire immunity) compare to the exotic chicken. The objective of the study was to assess the challenges facing Local Chicken production in selected areas of the three senatorial zones of Plateau state, Nigeria and how this influences productivity.

Materials and Methods

Study Site: The study area was the three senatorial zones of Plateau state, Nigeria. Jos south Plateau of Nigeria located on latitude and longitude 9.8965° N, 8.8583° E and has average temperatures range from 15.5 °C to 18.5 °C in the coolest months to 27.5 °C to 30.5 °C during the hottest months usually occur in the dry season months of March and April. Rainfall ranges from 2,000 mm per year in the southwest to 1,500 mm or less in the drier northeast. Rainfall for the town of Jos averages 1,411 mm per year.

Sampling Procedure

One hundred and twenty (120) questionnaires are produced and administered to the farmers in the study areas. A multi-stage random sampling methods was used for selecting LGAs, wards and households. Plateau State has three agricultural zones made up of a total of seventeen (17) local government areas (LGAs).
Firstly, two (2) LGAs with highest population were randomly selected from each of the three agricultural zones in Plateau State to get a total of six (6) LGAs for the study. The three agricultural zones and their components LGAs are: Northern zone: Jos-South, Jos-North, Jos-East, Riyom, Barakin-ladi and Bassa. Central zone: Bokkos, Mangu, Pankshin, Kanke and Kanam Southern zone: Langtang-North, Langtang-South, Mikang, Wase, Shendam and Qua'an-Pan. Secondly, random sampling technique was adopted for selecting two (2) wards from each of the randomly selected LGAs, making a total of twelve (12) wards. Lastly, in each of the randomly selected wards, ten questionnaires were randomly distributed to local chicken farmers giving a total of 20 questionnaires for each randomly selected LGA and 120 respondents for the study.

Method of Data Collection

. The data focus on obtaining information about husbandry practices, biosecurity measures, common diseases of LC, disease preventive measures, methods of handling sick birds and some socio-economic characteristics of the poultry farmers such as respondent position in household, education attainment as well as problems encountered during the production season.

Data Analysis

The data collected were subjected to Statistical analysis using simple descriptive statistics analysis such as percentages.

RESULTS AND DISCUSION

Major Diseases of LC in Plateau State

The result in table 2 shows the major LC diseases in Plateau state and the results indicate CRD/Coughing 34.3% in Northern zone, fowl pox 32.8% in central zone and 31.3% is most prevalent LC disease within the zones, follow by Newcastle 29.2% in Southern, and Coccidiosis 22.9% in Southern zone. Coughing/CRD 34.3% and 31.3%, Fowl pox 32.8% are the major LC disease in Northern, Southern and Central zones respectively. In a general, most LC farmers in Plateau state responded that CRD 29.8%, Fowl pox 27.1% and ND 26% are the major disease of LC while few responded that Coccidiosis 17.7% as one of the major LC diseases. This might be because of climate condition of plateau which is cold and predisposed LC to these Coughing/CRD as it shows highest among the disease and high rainfall that favor mosquitoes growth which predisposed LC chickens to Fowl pox as a result of the mosquito bite. This finding was in line with Serkalem *et al.* (2005) who reported that ND; Coughing/CRD and Fowl pox are the most prevalent major disease of LC in Nigeria. Serkalem *et al.* (2005) also reported that ND was one of the major infectious diseases affecting productivity and survival of village chickens in central high lands of Ethiopia.

Table 2: Prevalent Diseases Experienced by Local Chicken Farmers

	N-zone n=40	C-zone n=40	S-zone n=40	Total n = 120
	n* (%)	n* (%)	n* (%)	n(%)
Coccidiosis	8 (11.9)	13 (19.4)	11 (22.9)	32 (17.7)
Newcastle disease	17 (25.4)	16 (23.9)	14 (29.2)	47 (26)
Fowl fox	19 (28.4)	22 (32.8)	8 (16.7)	49 (27.1)
Coughing/CRD	23 (34.3)	16 (23.9)	15 (31.3)	54 (29.8)
TOTAL	67*	67*	48*	182*

*Multiple responds, N=Northern zone, C=Central zone, S=Southern zone, n= number of respond

Treatment and Diseases Control

Table 3 shows various ways LC farmers on the Plateau control and treat disease of chickens and the result indicates that most farmers 34.8% used local herbs in northern zone, 29% in southern zone vaccinate bird's prior against diseases, 20.9% in central sell sick birds as control measures, follow by 17.4% buy veterinary drugs and treat sick birds themselves. Others means of disease control and treatment used by chicken's farmers are call veterinarian officer for treatments, slaughter sick birds and did nothing ranges 0% to 16.9%. This study was able to found that majority of LC farmers in plateau state used local herbs 23.6% to treat and control chicken's disease while few responded as those that did nothing 0.8% when birds were sick. This might be because local herbs are cheaper and easier to get within their surrounding and possibly farmers are not exposed to vet drugs and vaccination of birds. This finding agrees with Ovwigho *et al.* (2009) who opined that LC producer have not been able to afford the high cost of inputs e.g. drugs cost, veterinary and extension services, therefore are not exposed to good management practices and vet drugs. Also, Ovwigho *et al.* (2009) Further reported that LC farmers lack extension services and awareness on diseases control.

Table 3: Treatment and Control of Diseases

	N-zone n=40	C-zone n=40	S-zone n=40	Total n=120
	n* (%)	n* (%)	n* (%)	n* (%)
Use of herbs	31 (34.8)	16 (18.6)	14 (16.6)	61 (23.6)
Buy veterinary drugs and treat myself	14 (15.7)	15 (17.4)	14 (16.6)	43 (16.7)
Call veterinary officer	8 (9)	8 (9.3)	10 (12.7)	26 (10)
Sell	8 (9)	18 (20.9)	8 (9.5)	34 (13.2)
Slaughter	13 (14.6)	14 (16.3)	13 (15.6)	40 (15.5)
Vaccination	15 (16.9)	13 (15.2)	24 (29)	52 (20.2)
Do nothing	0 (0)	2 (2.3)	0 (0)	2 (O.8)
TOTAL	89*	86*	83*	258*

*Multiple responds, N=Northern zone, C=Central zone, S=Southern zone, n= number of respond

Respondents suggestion on where best extension services can be rendered to LC Farmers table 1. The results indicate that most respondents suggested that used radio programs 58.8% in Southern, organizing seminar for farmers 55.8% in Central, 47.1% are best and efficient in rendering extension services to LC farmers within the zones follow by the role of the extension agents to farmer's villages 32.7% in Central zone, 27.5% in Northern zone while few farmers opted for used of churches and mosques 9.8% in Northern zone, 1.9% in Central zone and 0% in Southern zone. The study also shows that majority of LC farmers in plateau suggested organizing seminars for farmers 40.9% and minimal suggested used of churches and mosques 4%. This implies that organizing seminars will encourage participation/demonstration and very efficient since there is physical contact between the farmers and

extension agents other than use of audio-visual. This finding is in concomitants with Wachira *et al.*, (2009 who reported that seminars with participatory development programs is more efficient and effective in rendering extension as farmer to farmer exchange ideas during/after seminars and also increases radio, television and other mass media, since battery and power supply is a major challenges of rural communities if Radio/TV is to be used only.

Table 1: Respondents suggestion on where best extension services can be rendered to LC farmers

	N-zone n=40	C-zone n=40	S-zone n=40	Total n = 120
	n (%)	n (%)	n (%)	n(%)
Organized seminar for farmers	24 (47.1)	29 (55.8)	8 (38.1)	61 (49.2)
Use of churches and mosque	5 (9.8)	1 (1.9)	0 (0)	6 (4.8)
Use of radio broadcast	8 (15.7)	5 (9.6)	5 (23.8)	18 (14.5)
Send extension agent to farmers' villages	14 (27.5)	17 (32.7)	8 (38.1)	39 (31.5)
Total	51*	52*	21*	124*

*Multiple responds, N=Northern zone, C=Central zone, S=Southern zone, n= number of respond

CONCLUSION

The challenges facing Local Chicken farmers in the three senatorial zones of plateau state are diseases, lack of veterinary medicine services availability, weak extension support and training services.

RECOMMENDATIONS

The research therefore recommended that Government should employ enough extension staff and deploy them to villages to educate the farmers on modern ways of managing the Local chickens. The birds in the zones should be improved through upgrading.

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