

An Assessment of Village Chicken Management Practices in Yobe state, Nigeria

Sule A Garba¹, Abdu P Ayuba³, Ajogi I², Umoh Jarlath U², Balami Aryhel⁴

¹Department of Veterinary Public health and preventive Medicine, University of Maiduguri, Nigeria,

²Department of Veterinary Public health and preventive Medicine, Ahmadu Bello University Zaria,

³Department of Veterinary Medicine, Ahmadu Bello University, Zaria, Nigeria.

⁴Department of Veterinary Medicine, University of Maiduguri, Nigeria.

suleadamu@yahoo.co

Abstract: A total of 85 questionnaires were administered on village chicken farmers across 17 randomly selected villages in Yobe state, Nigeria to obtain information on village chicken management. About five questionnaires were administered on 5 farmers that were randomly choosing per village. The results showed that most respondents (50.6%) were between 20-40 years old. Whose occupation are mainly farmers (58.3%) who had received primary or Arabic education (78.8%) with more than 5 years (88.2%) of experience in poultry production. Up to 87.1% of the respondents acquired their flocks from the market. Most farmers (71.1%) do not provide housing for their chickens. Up to 68.2% of the respondents provided supplementary feed to their birds. While all the farmers clean their chicken houses and areas where chickens rest, none of them vaccinated chickens against any disease. Rather 36.5% of them administered orthodox drugs, 32.0% administered nothing to sick chickens with only 5.9% of the respondents consulting a Veterinary or Extension Officer when their chickens were sick. Up to 62.4% did not consciously practice isolation of sick from healthy chickens. Most of the respondents (68.2%) consume sick chickens and most of them (69.5%) had experienced over 50% mortality in their flock over the last 1 year. Most of the respondents (84.9%) had claimed that chicken mortality was frequent during the dry season. Dead chickens (82.4%) were usually thrown away on the garbage. The result has implication on the epidemiology of Newcastle and other poultry diseases.

[Sule A G, Abdu P A, Ajogi I, Umoh J U, Balami A. **An Assessment of Village Chicken Management Practices in Yobe state, Nigeria.** *World Rural Observ* 2014;6(2):7-11]. ISSN: 1944-6543 (Print); ISSN: 1944-6551 (Online). <http://www.sciencepub.net/rural>. 2

Key words: village chickens; management; Newcastle disease

1.0 Introduction

Village chicken constitutes the majority of family poultry that has over 84% of the poultry population (Adene and Oguntade, 2006). These birds are owned and reared mostly by women and children under extensive system of production system with minimal input (Gu'eye, 2000). Village chickens are consumed as a source of protein, for maintenance of social relationships, income and medicinal purposes.

Yobe has over 3 million chickens that with improvement can make a significant contribution towards the enhancement of protein intake within an ever growing population of Nigeria.

An understanding of the management of these chickens will enable the institution of appropriate interventions and facilitate the restructuring of the poultry industry.

It is against this background that structured questionnaires was administered to 85 village chicken farmers to examine the management of village chickens especially, with regards to Newcastle disease - a viral disease regarded as the principle limiting factor in village chicken production in Africa, and as the most important disease of chickens in Nigeria (Abdu, 1992; Alexander, 1991). All the 85 farmers

surveyed represent 85 households that were selected from 17 villages in Yobe state.

1. Objective of the study

The objective of the study is to assess village chickens management practices among village chickens in Yobe state, Nigeria.

1.1 Hypothesis

Village chickens management practices do enhance the control of Newcastle disease among village chickens in Yobe state.

2. Methodology

2.1 Study Area

This study was conducted within 17 villages in Yobe State in the northeastern zone of Nigeria. The state covers an area of 42,962 square kilometers and shares boundary with Borno, Gombe, Bauchi and Jigawa States; and an international boundary with the republic of Niger. The State has seventeen Local Government Areas (LGAs) with its' capital in Damaturu. The people of the state are of different ethnic groups whose occupation includes crop and livestock production, trading and fishing. The state has an estimated chicken population of 3.4 million of which 3.0 million are family poultry (Federal Department of Livestock and Pest Control Services,

2006). All the seventeen villages used in this study were randomly selected from a list of 64 villages (that was drawn on the basis of 4 villages randomly selected from each of the 17 Local Government Areas). The selected villages were shown in table 1 below.

Table I: list and location of villages from which respondents were interviewed

Villages	longitude	latitude
Badejo	11°39'43.24"N	11° 6'24.24"E
Bombori	12°55'3.61"N	10°25'35.80"E
Buniyadi	11°11'22.77"N	12° 2'38.95"E
Damagum	11°40'36.67"N	11°20'21.98"E
Damaturu	11°42'43.24"N	11°48'17.32"E
Dapchi	12°29'50.00"N	11°30'19.18"E
Daya	12°20'8.03"N	10°28'0.00"E
Gadaka	11°16'54.98"N	11°13'34.15"E
Gashua	12°52'8.88"N	11° 2'24.34"E
Garin maje	11°42'3.24"N	11°12'20.92"E
Geidam	12°53'42.60"N	11°55'25.88"E
Jakusko	12°24'45.37"N	10°47'50.12"E
Janga-dole	11°29'23.74"N	11°13'41.64"E
Kukar-gadu	11°31'50.92"N	10°58'48.66"E
Nangere	11°51'48.33"N	11° 4'16.33"E
Nguru	12°52'22.57"N	10°26'58.27"E
Potiskum	11°42'43.43"N	11° 4'38.68"E

2.2 Selection of respondents

Up to 5 village chicken farmers were randomly selected from 17 villages and interviewed on chicken management practices. Responses on their socio-demographic characteristics and management practices were collected and collated. Socio-demographic question includes age, sex, level of education, occupation and experience in village chicken production. Questions asked on village chicken management practices includes: source of birds, housing provided, kind of supplementary feed provided, practice of vaccination of chickens, sales or consumption of sick chickens, actions taken when chickens are sick, level of mortality experienced and practice of disposal of dead chickens and inedible chicken parts.

2.3 Questionnaire

An interviewer administered questionnaire was used in this study. The questionnaire was based on Newcastle disease which is locally regarded as mai kere or jonga. Farmers commonly identify the disease with symptoms of prostration, weakness, respiratory signs, torticollis, greenish diarrhea and high mortality. Interviewees were asked questions that pertains their socio-demographic characteristic and management practices.

2.3 Data analysis

The results were analyzed using simple descriptive statistics (frequency and percentages).

3. Results and Discussion

3.1 Socio-demographic characteristics of respondents

The socio-demographic characteristics of respondents interviewed are shown in table I. Most of the respondents (50.6%) were between 20-40 years old. About 55.3% of them were farmers who had received either formal or Arabic education (78.8%). The distribution of respondents by their experience in village chicken production showed that 88.2% had over 5 years experience.

3.2 Village chicken management practices of respondents

The distribution of respondents by village chicken management practices are shown in table II. Up to 87.1% of the respondents acquired their chickens from the market. Only 28.3% of the respondents provided housing for the village chickens. Most of the respondents (68.2%) provided some form of supplementary feed to their scavenging chickens. The supplementary feed given was mostly a combination of grains, bran of cereals and kitchen leftovers (82.3%).

3.3 Respondents' health care practices

The distribution of respondents' healthcare practices is presented in table III. All the respondents did not practice vaccination of village chickens against ND or any disease. All of them periodically clean poultry house or areas where chickens rest. The actions respondents took when chickens were sick range from administering orthodox drugs they purchased from the chemist (36.5%), administering traditional drugs (18.8%), or a combination of both orthodox and traditional drugs (5.9%) consulting a veterinary/extension officer (5.9%), to administering nothing to sick chickens (32.9%). About 70.6% sold sick chickens while 29.4% of the respondents did not sell sick chickens. About 62.4% of the respondents did not isolate sick from healthy chickens. About (68.2%) of the respondents consumed sick chickens. Up to 82.4% of the respondents disposed dead chickens on the garbage, the remaining (17.6%) of the respondents buried dead chickens.

3.3 Respondents' assessment of chicken mortality and seasonal occurrence of diseases

The distribution of respondents' assessment of village chicken mortality and seasonal occurrence of chicken mortality is shown in table IV. The respondents' experience of chicken mortality due to diseases within their flock from last dry season to the present dry season showed that 65.9% of the respondents had experienced greater than 50% flock mortality, while, 34.1% of the respondents had experienced less than 50% flock mortality. About 85.9% claimed that chicken mortality occurred during the dry season, 1.2% claimed it occurred during the rainy season while 12.9% of the respondents claimed it

occurred all year round.

3.4 Discussion

The study showed that the current management of village chickens might not facilitate the control of Newcastle disease and other diseases.

The finding that most respondents were between the ages of 20-40 years indicates that middle age people are actively involved in management of village chickens and should be the target of any intervention program on village chickens. The findings are similar to the findings of Adeniyi and Ogunntunji (2011)

The finding that most respondents had received primary or Arabic education may be exploited in designing extension and disease control awareness programs. These findings differ from that of Dipeolu et al. (1996) who found about 70% of the farmers rearing chickens were illiterates probably because koranic education was not considered as part of literacy. The lack of housing for village chickens in most households (71.1%) seem to either suggest the farmers inability to afford the cost of construction of the housing or the unwillingness of farmers to invest in village chicken production because of the high mortality associated with it. The results suggest that village chickens are reared under an extensive system of production in Yobe state which is similar to the observations made by Eshiett et al. (1989).

The provision of supplementary feed to scavenging chickens by most respondents (92.9%) seem to depict an attempt by farmers to improve the nutrition of their birds perhaps to enhance rapid weight gain. The provision of supplementary feed to scavenging village chickens were also observed by Dipeolu et al. (1996) and Istifanus (1989). The supplementary feed given to chickens by most respondents were combination of grains, bran and kitchen leftovers (81%) with none of respondents providing protein supplement to village chickens probably because of high cost protein feed.

The finding that all the respondents did not vaccinate village chickens against Newcastle disease or any other disease is the very reason why the current village chicken management practice cannot enhance the control of Newcastle disease. Non vaccination practices may be due to lack of awareness on the part of farmers as only 5.9% of the farmers consulted a veterinary or extension officers for what actions to take when their chickens are sick. It may also be associated with the culture that only commercial chickens deserve such treatment or the cost of vaccinating village chickens was probably unaffordable to the farmers as observed by Adu et al. (1986) and Olabode et al. (1992).

Since farmers do not vaccinate chickens against ND, their possibility of significantly improving their household income from chickens is low as studies on

the control of ND has shown the possibility of farmers who control ND in their birds can increase their income by up to 42% (Woolcock et al, 2004).

The findings that 32.0% of the respondents did nothing to their sick chickens seem to indicate the futility of treating sick chickens that are afflicted with ND. The 5.9% of the respondents who consulted a veterinary/extension officer for what drugs to give to their sick chickens probably never adopted the advice of vaccinating their chickens or never obtain the vaccines to control diseases like ND or could not afford the cost of the treatment. The rest of the respondents who administered orthodox or traditional drugs or a combination of both were likely attempting to help the young chickens that may neither be slaughtered nor sold off to generate cash.

The possible reason why most respondents (70.5%) sell sick chickens was probably to augment their income as observed by Gue'ye (2000) and Spradbrow (1993-94). When farmers take sick chickens to the market they bring these chickens into contact with healthy chickens which may lead to disease transmission. Since most respondents (70.1%) build their stock by buying chickens from the markets, the likelihood of buying a chicken incubating disease from the market is high. The findings that some of the respondents did not isolate sick from healthy chickens could enhance disease transmission. In addition, the probability of introducing chickens bought from the market into the existing flock is high, thus, increasing the risk of disease transmission.

TABLE II: Distribution of socio-demographic characteristics of respondents

Variables	Frequency	Percentage
(a) Age group distribution		
<20 years	6	7.1
20-40 years	43	50.6
>40 years	36	42.3
(b) Occupation:		
Farmers	47	55.3
civil servants	7	8.2
Businessmen	31	36.5
(c) Educational status:		
Illiterates	18	21.2
Educated (western/Arabic)	67	78.8
(d) Experience in village poultry rearing:		
<5 years	10	11.8
>5 years	75	88.2

The garbage could probably be a suitable place for dissemination the ND virus (NDV) and other infectious agents to scavenging chickens because most of the respondents (77.6%) disposed off their dead chickens on the garbage and most chickens converge around such areas to find food. In addition, most of the respondents who practiced the consumption of sick chickens (68.2%) possibly throw away the non-edible

chicken parts on the garbage.

The experience of more than 50.0% chicken mortality by most respondents (65.9%) was indicative of a high economic loss associated with village chicken production. The observation that chicken mortality occurs more during the dry season by most respondents may probably be related to an increased commercial

activities and festivities that occurs mostly during the dry season. The observation by most respondents that chicken mortality occurs more during the dry season was similar to the observation of Abdu et al. (1992). Since the disease was said to occur during the dry season suitable control measures should be enforced before dry season.

TABLE III: Distribution of respondents village chickens management practice

Item	Frequency	Percentage
(a) Source of chickens:		
Gifts	11	12.9
purchased from the market	74	87.1
(b) Provision of housing to chickens within village:		
Present	14	28.3
Absent	61	71.7
(c) cleaning of poultry house/area where chicken rest		
Yes	85	100
No	0	0
(d) Feeding practices:		
No feed supplements given	6	7.1
scavenging chickens receiving feed supplements	79	68.2
chickens on feed supplements only (exclusively for chickens in the market only)	21	24.7
(d) Feed type administered to chickens:		
Grains	1	1.2
Bran	13	15.3
kitchen leftovers	1	1.2
protein feed	0	0
combination of the above	70	82.3

TABLE IV: Distribution of respondents health care practices

Item	Number	Percentages
(a) Vaccination practices:		
Vaccinate	0	100
do not vaccinate	85	0
(b) Forms of treatment given to sick chickens:		
orthodox drugs obtained from the chemist	31	36.5
traditional drugs	16	18.8
administer both orthodox and traditional drugs	5	5.9
consult a veterinary or extension officer for what actions to take	5	5.9
administer nothing	28	32.9
(c) Practice of selling sick chickens:		
Sale sick chickens	27	31.8
never sale sick chickens	58	68.2
(d) Practice of isolating sick chickens:		
practice isolation	32	37.6
never isolate	53	62.4
(e) Practice of consumption of sick chickens:		
eat sick chickens	58	68.2
do not eat sick chickens	27	31.8
(f) Practice of disposing dead chickens:		
on the garbage	70	82.4
Buried	15	17.6
Burnt	0	0

TABLE V: Distribution of respondents' assessment of chicken mortality and seasonal pattern of disease

Item	Number	%
(a) Mortality:		
<50%	30	34.1
>50%	55	65.9
(b) Season:		
dry season	73	85.9
rainy season	1	1.2
all year round	11	12.9

4. Conclusion and policy implications

This study recommends the need for longitudinal study to capture the nature of village chicken production system and the impacts of the system on disease occurrence and control. The study also recommends the need to improve awareness and veterinary extension services among village poultry farmers. The farmers between the ages of 20-40 should be targeted for any intervention program.

Vaccination campaigns by Government and Nongovernmental organizations must both be advocated and implemented for control of Newcastle and other poultry diseases.

Participatory approaches like the farmer field school should be utilized in designing and disseminating technologies so as to incorporate farmers' socio-economic conditions and expectations for sustained adoption.

Acknowledgement:

We are grateful to the Ministry of Animal of Fisheries Development, Yobe state for their support and cooperation towards this research.

Correspondence to:

Sule A Garba
Department of Veterinary Public Health & Preventive Medicine, University of Maiduguri,
PMB1069, Nigeria
suleadamu@yahoo.com

References

1. Abdu PA, Mera UM and Saidu L. A study on chicken mortality in Zaria Nigeria. Research National Workshop on Livestock and Veterinary Institute, Vom, Nigeria1992: August, 11-14th.
2. Alexander DJ. Newcastle Disease. In: Rweyemamu,

- M.M., Palya, V., Win,T., and Sylla, D. (Eds.), Newcastle Disease Vaccine for Rural Africa. Debre Zeit, Ethiopia, Pan Africa Veterinary Vaccine Centre1991: 7-45.Adene DF and Oguntade AE. (2006): The structure and importance of village basedpoultry industry in Nigeria. FAO study.
3. Adu FD, Edo U and Sokale B. Newcastle disease: the immunological status of Nigerian local chickens. Trop.Vet:1986: 4: 149-152.
4. Dipeolu MA, Karipe OM and Gbadamosi AJ. Chick mortality in indigenous Chickens under free range system in Abeokuta, Nigeria. Nigerian VeterinaryJournal :1998: 19: 5-11.
5. Eshiett N Okereka, O C AND Onani IOA. Productivity of indigenous Chickens under village system. A paper presented at the 25th annual conference of Africa. Society of Nig. Owerri. 1989.
6. Federal Department of Livestock and Pest control Services(2006) Highly Pathogenic Avian Influenza standard Operating Procedures.
7. Istifanus ID. Survey of poultry in the middle belt of Nigeria. Proc.of workshop on Rural poultry Development in Africa (Sonaiya, E.B. ed.), O.A.U.,Ile-Ife 1989: 221-235.
8. Olabode AO, Lamorde AG, Shidali, NN and Chukwoedo AA. (1992). Village chickens and Newcastle disease in Nigeria. ACIAR Proceedings1992: 39: 159-160.
9. Adeniyi O R and Oguntunji A O 2011: A socio-economic survey of cultural practices and management of village poultry production in Ondo area, Nigeria. Livestock Research for Rural Development. Volume 23, Article #261. Retrieved February 9, 2014, from <http://www.lrrd.org/lrrd23/12/aden23261.htm>
10. Gu'eye E F. (2000). The role of family poultry in poverty alleviation, food security and the promotion of gender equality in Rural Africa. Outlook Agr. 29: 129-136.
11. Spradbrow P. B. Newcastle disease in village chickens. Poultry Science Review 1993-94:5:57-59.
12. Woolcock RF, Harun M and Alders RG.. The impact of Newcastle disease control in village chickens on the welfare of rural households in Mozambique In: a paper presented at the Forth Co-ordination Meeting of the FAO/IAEA Co-ordination Research Program on the 'Assessment of the effectiveness of vaccination strategies against Newcastle disease and Gumboro disease using immunoassay-based technologies for increasing backyard poultry production in Africa.' Vienna, Austria:2004: 24-28.