

*Full Length Research Paper*

# Influencing factors of duck production in the Southwest of Nigeria

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**The goal of this study was to evaluate the influencing factors affecting duck production as possible animal protein or meat source in Nigeria. The study was undertaken in the southwest of Nigeria where poultry practices assume high dimension. A multi-stage random sampling technique was used to select three states, and from each state, five Local Government Areas (LGAs). One community was chosen from each LGA from which two wards were sampled. Five respondents were randomly interviewed from each ward. In all, a total of 150 respondents were used for the study. The result showed that availability of feeds, cost of input and housing, use of hired labour, age of respondents and membership of cooperative society had significant ( $P>0.05$ ) relationship with involvement in duck production. The respondents also perceived that taboos and not religion, had influence on duck production. It was therefore recommended that extension contact should be intensified to remove negative perceptions and that supply of inputs and feeds be made accessible at affordable costs. Where the costs of production appear relatively high, people should be assisted to form themselves into cooperatives.**

**Key words:** Animal protein, consumption, ducks production.

## INTRODUCTION

In recent time, concerted efforts have been made to improve animal protein consumption in most developing countries by the government. These include enhancing the production of animal protein from fast growing but prolific livestock (Umeh et al., 1999) and by financing researches in animal production. However, one aspect of poultry production which is only just beginning to show its potential in this region is duck production. Duck has always been of lesser significance in contributing to meat production than chickens. As a result of the fundamental discoveries in the management techniques related to ducks, this situation is changing and the exploitation of the species is now beginning to take place in West Africa (Cherry, 1981).

Therefore, there is a compelling need to integrate duck production into Nigerian agricultural system, for they are not only important as source of nutritious meat, but as a

veritable source of eggs for human consumption. According to Jacobs (1985) cited by Umeh et al. (1999), (World Bank, 1996; FAO, 1996; Nworgu et al., 1997) ducks are meatier than chickens weighing 2.48 to 2.93 kg at 8 to 9 weeks of age. Their eggs are very big and delicious. Small breeds like Pekin weigh 1.72 to 2.04 kg at 9 to 10 weeks of age. Ducks also suffer less from local diseases which are common in chickens and do not necessarily need sophisticated compounded feeds. In addition, unskilled labour can be quickly taught how to rear them successfully on poor quality feed. Thus, ducks have profit potential and ability to produce high quality protein for small farmers or big land owners alike as prevalent in the study area.

However, there are some pertinent questions that have to be answered. For instance, why are poultry farmers showing apathy to the raising of ducks in Nigeria? What cultural belief is associated with the raising and consumption of ducks? Finding answers to these questions forms the main thrust of this study. It is believed that the study would assist to remove the identifiable barriers

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**Table 1.** Demographic characteristics of respondents (n = 150).

Demographic characteristics	Percentage
Sex:	
Male	72.0
Female	28.0
Total	100.0
Age:	
≤ 25	9.0
26 to 35	25.0
36 to 45	27.0
46 to 55	21.0
56 to 65	12.0
≥ 66	6.0
Total	100.0
Marital status:	
Married	25.0
Single	12.0
Divorced	1.0
Separated	2.0
Total	100.0
Household size:	
1 to 5	57.0
6 to 10	36.0
Above 10	7.0
Total	100.0
Level of education:	
No education	13.0
Adult Literacy	2.0
Primary school education	27.0
Secondary school education	34.0
Tertiary education	24.0
Total	100.0
Religion:	
Christianity	57.0
Islam	33.0
Others	10.0
Total	100.0

Source: Field survey (2006).

to duck production and to prescribe the practices that would enhance production and thereby contribute to the mobilization and sensitization for greater attention to duck production in this region.

## MATERIALS AND METHODS

The study was carried out in the Southwest geo-political zone of

Nigeria. It is made up six states namely; Ekiti, Lagos, Ogun, Ondo, Osun and Oyo states. The region is well endowed with abundant and material resources. It is entirely within the tropics and bounded in the south by Atlantic Ocean, to the east by Niger Delta Region and to the North by guinea savannah in the middle belt. The region enjoys high rainfall of about 1500 mm annually spreading through April to October. The livestock farmers in the region are involved in ruminants, pigs, fish, rabbits and poultry production. The favourableness of the climatic and vegetation attributes of this region was the reason why it was chosen for this study. Also worth mentioning for the choice of the southwest of Nigeria, was in consonance with Osakwe (2006), who reports that, Nigeria has an estimated poultry population of around 140 million birds largely concentrated in the southwest of the country. Three states were randomly selected from the six states that make up the geo-political zone. A multi-stage random sampling procedure was used to select fifteen Local Government Areas (LGAs), (five from each of the three states). One community was randomly chosen from each LGA making up to fifteen communities that were used for the study. Each community was further divided into five wards from which two wards were randomly selected giving a total of thirty wards. Five respondents were randomly interviewed from each selected ward for the study resulting in a total of 150 respondents. The primary data were collected by means of a pre-tested and structured interview schedule while the secondary data were through textbooks and research publications. The collected data were analyzed using frequencies, percentage, tables, means and chi-square analysis.

## Measurement of variables

### *Involvement in duck production*

This was based on the response of "yes" or "No" to duck production.

### *Perception of respondents*

This was by the use of five-point Likert Scale: Strongly agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly disagree (SD). For a positive statement, scores of 5,4,3,2 and 1 were scored for SA, A, U, D, SD respectively while the scores were reversed for negative statements. The mean score for each statement was obtained and placed on a scale of 5. The five scale was later trichotomized into "agree" (3.5 and above), "undecided" (2.5 to 3.49) and "disagree" (less than 2.50).

### *Extension information*

Measured through response of "Yes" or "No" to whether the poultry producers receive information from extension or not.

### *Level of production*

This was measured by using the percentage of respondents that were raising duck.

## RESULTS AND DISCUSSION

Table 1 shows the demographic distribution of the respondents. While 72.0% of the respondents were males, 28.0% were females. The age bracket of the

**Table 2.** Socio-economic characteristics of respondents (n= 150).

Socio-economic characteristics	Percentage
Primary occupation:	
Farming	16.0
Others	84.0
Total	100.0
Secondary occupation:	
Farming	62.0
Others	38.0
Total	100.0
Farming experience (year):	
1 to 5	10.0
6 to 10	16.0
Above 10	74.0
Total	100.0
Type of farming:	
Food crops only	62.0
Tree crops only	7.0
Animal production only	4.0
Mixed	27.0
Total	100.0
Membership of cooperative society :	
Yes	39.0
No	61.0
Total	100.0

respondents shows that only 18.0% were above 55 years while about 82.0% were 55 years or below. This result implies that majority of the respondents could be taken to be in their active years and should be capable of being involved in poultry production, duck production inclusive. Further findings showed that, 85.0% of the respondents were married and 57.0% had a household size of between 1 and 5, 36.0% had between 6 and 19 while 7.0% had more than 10. In this case, more of household labour than hired labour would likely be prevalent particularly in the rearing of ducks, if they did.

It was also found that, 75.0% of the respondents had varying levels of education. This result is a reflection of the high level of education attainment in the study area probably due to the early exposure of the people to education via the free education policy that the pre-independence regional government embarked upon. This level of enlightenment could be an added advantage for the people in overcoming some cultural factors and taboos that could stand against duck production.

In Table 2, only 16.0% had farming as their primary occupation, while 62.0 had it as their secondary

occupation. This finding is not a true reflection of what is obtained in the rural communities of Nigeria where research findings (Alfred, 2001; Olayide, 1980) had shown that over 70% of rural dwellers are engaged in agriculture for livelihood. The result may however be as a result of the data collection not being limited to rural communities as some urbanites were equally sampled. The result also showed that 74.0% had been in farming for over 10 years. The long experience of the respondents, if they reared duck, would have enabled them have the mastery of the intricacies of the birds' production. Furthermore, Table 2 indicates that only 4.0% of the respondents kept animals only while 27.0% kept animals along with crop production. This finding therefore, gave a total of 32.0% of the respondents being involved in animal production which might have included duck production or not. Poultry production in rural Nigeria is mostly through backyard production. Supporting this view is Osakwe (2006), who puts it at 80%, while Poultry Update (2002) puts it as 60%. In addition, 39.0% of the respondents belonged to cooperative society while 61.0% did not, thus implying that, less than 40% of the respondents would have had access to credit and subsidized inputs usually associated with cooperative groups.

Table 3 is the result of the activities of the respondents in duck production. Only 23.0% kept duck according to the finding. While 19.0% kept below or up to 500 ducks, 4.0% kept above 500 ducks. Among those who did not keep ducks, 7.0, 5.0, 33.0 and 20.0% attributed their non-involvement in duck production to lack of capital, religious factors, taboos and perceived non-profitability respectively, while 12.0% attributed it to reasons other than the aforementioned reasons. It was also found that 20.0% out of the 23.0% that kept duck had between 1 and 10 years of duck production experience and they obtained their foundation stock from other duck farmers (3.0%), open market (15.0%) and other sources (5.0%). The source where the foundation stock is obtained is very important in duck production. Stock is better obtained from government source or reputable farmers where improved breeds could be obtained. The farmers would remain to be blamed for not obtaining their stock from the right source, for the fact that, Nigeria Government has liberalized the import of vital inputs. Some of these include day-old chicks, parent breeding stock and grains since 1998 (Situation Update 2006). From this result, the source of the foundation stock for those few that keep ducks is suspect and it may result in poor output. In addition, it was found that 100.0% of the duck producers obtained their feeds locally and also obtained their investment capital from their personal savings. Also, none of them belonged to any duck professional associations. These findings revealed that duck production in the study area was at its rudimentary level of operation.

Table 4 shows the result of the respondents' perception

**Table 3.** Distribution of respondents according to their responses to duck production (n = 150).

<b>Responses</b>	<b>Percentage</b>
Production of duck:	
Yes	23.0
No	77.0
Total	100.0
Duck population :	
1 to 500	19.0
501 to 1000	4.0
None	77.0
Total	100.0
Non - duck farmers' reasons:	
Lack of capital	7.0
Religious factors	5.0
Local taboos	33.0
Perceived not profitable	20.0
Other reasons	12.0
Duck farmers	23.0
Total	100.0
Years of production :	
1 to 5	13.0
6 to 10	7.0
Above 10	3.0
Not applicable	77.0
Total	100.0
Source of foundation stock:	
Duck farmers	3.0
Market	15.0
Others	5.0
Non - duck farmers	77.0
Source of feeds:	
Locally made	23.0
Non - duck farmers	77.0
Total	100.0
Source of investment capital :	
Personal savings/friends	23.0
Not involved	77.0
Total	100.0
Membership of duck farmers association:	
No	100.0
Total	100.0

Source : Field survey (2006).

on the role of extension service on duck production. Accordingly, 21.0% consented that duck feeds are

available but 2.0% did not agree while 97.0% were indifferent. Also, 79.0% of the respondents claimed that

**Table 4.** Role of extension information on duck production by respondents (n = 150).

<b>Role of extension</b>	<b>Percentage</b>
Availability of feeding materials:	
Available	21.0
Not available	2.0
Do not know	77.0
Total	100.0
Opinion on taboo :	
Taboo against production	79.0
Taboo not against production	21.0
Total	100.0
Extension visit:	
Yes	12.0
No	88.0
Total	100.0
Frequency of extension visit :	
Frequent	8.0
Not frequent	4.0
Undecided	88.0
Total	100.0
Information on duck production:	
Yes	1.0
No	15.0
Undecided	84.0
Total	100.0
Adoption of Innovation :	
Yes	12.0
No	4.0
Undecided	84.0
Total	100.0

Source: Field survey (2005).

there were taboos that serve as constraints in the production of duck in the study area while 21.0% claimed there were none. Rural Nigerians view seriously the incompatibility of farm practices with their beliefs, for instance, Jibowo (2000) reported that, new farm practice is more likely to be rejected if it is not compatible with the people's belief than the one that is. Therefore, one of the militating factors to agricultural development among the developing countries is cultural belief. Agricultural practices that therefore, run foul of cultural beliefs are likely to be opposed by the adherents of such beliefs (Williams et al., 1984; Ekong, 1996). This might have been one of the reasons why there has been much resistance to duck production despite its reported rich protein potentials as compared with other poultry birds in

this region.

Furthermore, findings indicated that only 12.0% of the respondents had ever been visited by extension agents. Among the 12.0 and 8.0% agreed that extension visits were frequent while the remaining 4.0% said they were not frequent. Extension contact has been found to be a vital factor in the adoption of technologies (Okunlola et al., 1998). However, only 1.0% of the respondents confirmed that information from extension agents has relevance to duck production. Nevertheless, 12.0% responded to having adopted one technology or the other. If farmers must adopt improved breeds of duck and raise them with improved feeds and other inputs, extension contact must be more regular with relevant information.

**Table 5.** Chi square analysis of the relationship between the respondents' involvement in duck production and their socio - economic characteristics.

Variable	$\chi^2_{cal}$	$\chi^2_{Tab}$	DF	Remarks
Duck production and;				
Sex	0.463	2.71	1	NS
Age	52.74	9.24	5	S
Marital status	3.95	6.25	3	NS
Family size	1.32	4.60	2	NS
Religion	4.40	4.60	2	NS
Level of education	4.33	7.78	4	NS
Cooperative society membership	18.96	2.71	1	S

Source: Field survey (2006), S = significant, NS = not significant, level of significance is 0.05.

**Table 6.** Chi - square analysis of the relationship between the respondents' involvement in duck production and some selected variables.

Variable	$\chi^2_{cal}$	$\chi^2_{Tab}$	DF	Remarks
Duck production and;				
Source of stock	2.85	4.60	2	NS
Availability of feeds	4.71	2.71	1	S
Cost of feed	13.26	2.71	1	S
Use of hired labour	10.98	2.71	1	S
Cost of housing	8.38	2.71	1	S
Opinion on duck production	0.25	2.71	1	NS
Extension agent contact	0.29	2.71	1	NS

Source: Field survey (2006), S = significant at 5% level of significance, NS = Not significant at 5% level of significance.

The relationship between being involved in duck rearing and some selected socio - economic characteristics are presented in Table 5. It was found that only age of the respondents and membership of cooperative society had significant ( $P < 0.05$ ) relationship with respondents' involvement in duck rearing. Others, such as sex, marital status, family size, religion and level of education did not relate significantly ( $P > 0.05$ ) with being involved in duck rearing by respondents. The young and middle aged respondents were more into duck production than those of the old age bracket. This may be attributed to the possibility of those age brackets being more likely to shun taboos due to their level of education and enlightenment.

Table 6 reveals that relationship existed between respondents' involvement in duck production and some other selected variables. It was found that, availability of feeds, cost of feeds, use of hired labour and cost of housing had significant relationship with the respondents' involvement in duck production. However, source of stock, perception of duck production and extension contact had no significant relationship with respondents' involvement in duck production. This implies that those variables that had significant relationship are those that

were vital in the respondents' decision to raise duck or not. Though, those who had no significant relationship could be said to be important, they did not affect the respondents' decision towards duck rearing.

Table 7 shows the results of the respondents' perception of duck production. It was found that, the respondents positively perceived (4.03) that taboos was a constraint to duck production in the study area while they negatively perceived (2.07) that religion has effect on duck production. However, the respondents were indifferent (3.33) on whether the respondents' experience enhances their interest in duck production but negatively perceived (1.50) of household size having influence on duck production. Furthermore, findings in Table 7 revealed that, while the respondents were indifferent (about 3.0) to whether duck production enhances their social status; they negatively perceived input availability not being a constraint to duck production. The negative perception implies that the respondents saw input unavailability as a constraint to duck production. They equally had positive perception (4.12) of low cost of input being able to enhance production. These might be because the availability and affordability of input could be motivating factors for venturing in to duck production. In

**Table 7.** Respondents' perception of duck production.

Statement	Level of responses										Mean score
	F	S	F	S	F	S	F	S	F	S	
Local taboos hinder duck production	52	260	27	108	20	60	15	30	4	4	4.08
Religion forbids the rearing of duck	40	40	40	80	1	3	11	44	8	400	2.07
Farming experience enhances interest in duck production	18	90	33	132	16	48	30	60	3	30	3.33
Household size has no effect on the decision to raise duck or not	18	18	33	66	16	48	4	16	2	10	1.50
Duck production enhances ones social status	24	120	47	188	9	27	15	30	5	5	2.76
Input availability does not defer duck rearing	44	44	41	82	3	9	10	40	2	10	1.85
If cost of input is low increase income could be enhanced	33	165	56	224	2	6	8	16	1	10	4.12
educated people are likely to embrace duck production more than the non – educated	19	95	37	148	10	30	28	56	6	6	3.35
One's gender does not influence interest in duck production	41	41	32	64	6	18	15	60	6	30	2.13
Adoption of duck production practices hinges on level of extension contact	18	90	25	100	29	87	21	42	7	7	3.26
	SA Strongly Agreed		A Agreed		U Undecided		D Disagree		SD Strongly disagree		

Source: Field survey (2006), F = frequency, S = score.

addition, the finding showed that, level of education, gender and extension contact were perceived by the respondents to be of less significance to duck production. This however did not agree with earlier report (Alfred, 2001; Williams et al., 1984) that level of education and particularly extension contacts are very significant to technology adoption and hence increase in production. The low level of involvement in duck production in the study area might have been instrumental to the results.

## Conclusions

The study has shown that duck rearing in the study area, despite the fact that the bird possesses the qualities inherent in other poultry birds, is not popular. The study showed that availability of feeds, cost of input and housing and use of hired labour had significant relationship with being

involved in duck production, so also were respondents' age and membership of cooperative society. It was also perceived that local taboos have influence on duck production among the respondents but did not perceive religion to have influence. It was therefore recommended that, extension contact should be intensified so as to remove the negative perception of the people towards duck production. Also access to input supply and feeds should be at affordable costs.

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