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PROFITABILITY ANALYSIS OF POULTRY LAYERS PRODUCTION IN THREE SELECTED LOCAL GOVERNMENT AREAS OF KANO STATE - NIGERIA

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Abstract

The study analyzed the profitability of layer poultry production in three local Government Areas (Rogo) Kumbotso and (Gezawa) of Kano State Nigeria. Random sampling techniques were used to select 150 layer poultry farmers. Data collection was by administration of questionnaires. Data collected were analyzed using descriptive statistics and Net farm income model to achieve the objectives of the study. The results from the costs and returns analysis shows the poultry layer production in the study area was profitable. The average returns per Naira invested the farmer will realize 0.58. Thus, the net farm income obtained is higher than the total costs incurred by the layer poultry farmer in the study area. Income can still be improved upon with appropriate pricing, adoption of proper management practices and accessing low cost inputs through bulk purchasing by farmers' cooperatives. The constraint faced by the layer farmers are limited access to credit, high cost of feed, frequent outbreak of diseases and high cost of vaccine and medication. It is recommended that appropriate input pricing, formation of society with the aim of purchasing feed mixing equipment which will help to reduce the cost of feed and adoption of proper management practices will improve income.

Key words**:** *profitability, layer poultry, production, spent layers, Kano state*

INTRODUCTION

The term poultry refers to all domestic birds kept for egg or meat production [5]. These include chicken, turkey, duck, geese, swan, ostriches and guinea fowl [9].
Profitability in layer production enterprise has encouraged more investment in the sector [1]. Poultry is one of the most profitable agricultural ventures and certainly the most profitable livestock enterprise. According to [10] supplementing protein in the diet of pullet chicks is a necessary step in promoting the growth rate and facilitating higher returns profitability in layers production.
Poultry products have social and important spiritual benefits and play an important role in economy in which it contribute about 10% of Agricultural GDP [2]. In many customs poultry is used for ceremonies sacrifice, gift and savings [8]. [4] Stated that poultry products which are sold contribute about 15% to the annual financial income of the house hold. Poultry provide meat, egg, feathers, manure, fertilizer, mayonnaise and dehydrated acid and play an important role in rural economy. In fact, poultry production is unique in that it offers the highest turnover rate and the quickest returns to investment outlay in the poultry enterprise production. Poultry layers production is important element in diversifying Agricultural production and increasing household food security. [3], stated that the role of poultry production in the economic development included the provision of adequate products of various industries such as pharmaceutical industries which supply the drugs and vaccines as poultry inputs, it increases the income of participating poultry entrepreneurs farmers, thereby improving their standard of living as it provide the research question.

The research questions

Despite the importance of poultry layers production in increasing the annual financial income of the household, a short fall in egg production in Nigeria has been as a result of grossly high demand for poultry egg and dwindling supply of the product [6]. This forms like focus of this study, using three selected Local Government Areas of Kano State as a case study. To this end an up to date knowledge of profitability in the industry will go a long way in bridging some of the knowledge gap and help in formulating policies aimed at ensure increased and more profitable poultry production in the country. In line with this, it is therefore important to undertake a study of this nature to provide the answers to the following research question.

(i)What are the socio-economic characteristics of the poultry layers producers?

(ii)What is the average flock size?

(iii) What is the average crates of eggs produced per production cycle?

(iv)How profitable is the poultry layers enterprises?

Objective of the study

The broad objective of this study was to analyze profitability of egg production in three selected Local Government Areas (LGAs), of Kano State.

The specific objectives are to:

(i)Identify the socio – economic characteristics of layers production in the study area.

(ii)Find out the average flock size per house hold

(iii)To determine the average crates produced per production cycle.

(iv)Determine the profitability of layers production enterprise.

MATERIALS AND METHODS

Population and Scope

The research was targeted and carried out in three selected Local Government Areas, namely Kumbotso, Gezawa and Rogo Local Governments Areas in Kano

State, Nigeria. A total number of 150 people were selected from the Local Government. Questionnaire Survey was adopted in collection of data so as to ascertain some of the claims.

Data collection

The data for this study were collected through the use of structured questionnaire. The questionnaires were designed to provide relevant information. The Local Government Areas are selected based on intensity of poultry layers producing villages from each selected (LGAs) were purposively selected based on their intensity in production. A total of one hundred and fifty (150) layers farmers were randomly selected in six selected villages. In each village 25 farmers were selected given total of 150 respondents. The list of the poultry farmers were obtained from Kano State Agricultural and Rural Development Authority (KNARDA) from the random selection was accomplished.

Data analysis

Data collected were analyzed by descriptive statistics such as range, frequency distribution, and percentages to achieve the first and second objectives. The third objective was achieved using farm budget model.

Farm Budgeting Model

Farm budget Model is a tool used to determine the level of resources used and output realized in farm enterprises with a view to measuring the profit level of the enterprise [7]. The farm budget model was used to compute the costs and returns in layers production in the study area.

This is:

$$NFI = GI - TC \text{ - - - - - } (1)$$

where:

NFI = Net farm income (profit), refers to the difference between gross income and total cost.

GI = Gross income. This represents the sum of the total value of all the layers birds at the end of the production.

TC = total cost. This represents all the enterprises incurred in a production by the farmers. This include chicks (x1), transportation (x2), light (x3), housing (x4), feed (x5), medication (x6), labour (x7), drinkers and feeders (x8).

Total Revenue: This represents the total out multiply by the price. The components of the revenue include Eggs, spent layer and litter.

RESULTS AND DISCUSSIONS

Socio-economic characteristics of the respondent

The socio-economic characteristics of the respondents consider in this study include gender, marital status, household size, educational level, years of farming experience and source of capital.

Table 1. Distribution of respondents according to socio-economic characteristics

Variables	Frequency	Percentage
Gender		
Male	115	77
Female	35	23
Marital status		
Married	95	64
Single	55	36
Holding size		
1 – 5	15	36
6 – 10	35	10
Education level		
Qur'anic	25	16.7
Adult	12	8.0
Primary	32	21.3
Secondary	53	35.33
Tertiary	28	18.66
Experience (years)		
1 – 5	20	13.33
6 – 10	30	20.0
11 – 15	60	40
16 and above	40	26.7
Source of fund		
Commercial banks	38	25.3
Personal savings	112	74.7

Source: field survey, 2018.

As indicated in table 1, the results of the study revealed that, the majority of the poultry layers farmers were males at the proportion of (77%). This confirmed the popular belief about the study area that farming was the major occupation which male folks dominate. Majority of the respondents (95%) are married. This shows that the society places high premium on marriage and can be considered responsible and rational in taking decisions that affect Agricultural productivity and income. Table 1 also reveals that most of the respondents have large house hold size. The household size plays a very important role as it serves as source of family labour requirement and cost saving. Hence, the number of people in a household determines the availability of labour in that family. The larger the family size the greater the labour on the farm and thus greater output for the farmers. The level of education of the respondents is moderately educated that would enable them to grasp new innovation and the perception and also help them in decision making as regards to their production, which may lead to boosting to poultry layers production. The result shows 89.99% of the respondents have between 6 – 20 years experience in poultry egg enterprise that indicates that the higher the years of experience of the farmers the more output realized and higher net farm income. It is expected that the years of experience in poultry layers production usually determines the effectiveness of farmers' decision with respect to inputs combinations or resource allocation. Table 1 reveals that 74.7% of the respondents source their funds for initial investment from personal saving; they don't have access to credit. This situation could be explained by small nature of their farm holdings and absence of collateral security that may be needed by the financial institutions before granting loans to prospective farmers. Also commercial banking demands much collateral and high interest rate from farmer which made it difficult for the farmers to obtained loans from banks.

The Flock size per household

Table 2 showed the distribution of respondents according to the size of flock.

Table 2. Flock size per house hold

Flock size	Frequency	Percentage
≤ 99	18	12
100 – 199	72	48
200 – 299	26	17.33
300 – 399	22	14.66
400 – 499	12	8
Average = 156.96		

Source: Field survey, 2018.

The results indicates 12% had ≤ 99 birds, 48% had 100 – 199 birds, 17.33% had 200 – 299 birds, 14.66% 300 – 399 birds and 8% had 400 – 500 birds. The 110 – 1,999 birds that had 48% was due to ease management and more economical to handle. The flock size of any large enterprise depends greatly on the resources base of the farmer and purpose for which the birds are kept.

Creates of eggs produced per production cycle

Table 3 indicates that the number of creates produced per production cycle. The quantity of eggs produced depends on the number of birds kept, the proper management and healthy breed. The result showed 16% had 448 creates of eggs per (≤ 99 birds), 23.33% had 476 creates of eggs with (100 – 199 birds), 20% had 560 creates of eggs with (200 – 299 birds), 23.33% had 697 creates of eggs with (300 – 399 birds), and 17.33% had 728 creates of eggs produced by the farmer was according to the recommended level, since it is within the range of 42 – 50 weeks and 51 – 52 weeks, hence it is an indication that, there is a healthy breed of birds and proper management practices. While the below production as a result of unhealthy breed and poor management practices. That creates has total number of 30 eggs.

Table 3. Distribution of respondents according to quantity of creates produced per production cycle

Flock (size)	No. of creates produced per production cycle	Period (weeks)	Frequency	Percentage
≤ 99	448	30 – 32	24	16
100 – 199	476	33 – 34	35	23.33
200 – 299	560	35 – 40	30	20
300 – 399	697	41 – 50	35	23.33
400 – 500	728	51 – 52	26	17.33
			150	100

Source: Field survey, 2018 Average = 252.25

Net farm incomes analysis of layer poultry production

The cost and returns analysis was employed to determine the profitability of this production the returns to be compared with the total costs; if the total return is greater than the total cost, the enterprise is said to have made profit. Thus, the profitability or net return of an enterprise is taken as total revenue less total of production, these consist of costs incurred on inputs such as feed, chicks, transportation, electricity (brooding), medication, labour and other items like housing, feeders and drinkers.

From table 4; it could be seen that average Net farm income obtained from all the respondent is ₦152,651.01. This finding is consistent on the profitability of layer poultry production. The size and the positive value of the net farm income shows that the respondents were able to cover their total expenses with level of net farm income obtained and had a sizeable proportion as a return to management. This shows poultry layers production is profitable in the study area. The average returns per naira invested the farmer will realize ₦0.58.

Table 4. Average costs and Returns of layers poultry per 150 layers in the study area

Cost items (₦)	Amount (₦)	Percentage
Variables		
Chicks	28,793.33	33.6
Feeds	45,871.53	53.6
Transportation	19,07.86	2.2
Electricity	47,65.66	5.5
Medication	2918.0	3.4
Labour (family and hired)	874.60	1.0
Total variables costs	85,131.02	99.3
Fixed costs:		
Depreciation on housing	2,468.0	0.02
Feeders and drinkers	1,463.45	0.16
Total fixed costs	3,931.45	0.044
Total costs	89,062.473	
Total Revenue	2,152.34	
Net farm income per production cycle	152,651.01	
Return to Naira invested	0.58	

Source: Field Survey, 2018.

The implication of this is that farmers raising layer poultry birds will survive both in the

short and in the long run because the resources engaged in its production were efficiently utilized.

CONCLUSIONS

From findings of this study, it is concluded that poultry layer production in the area of the study is profitable with a return of ₦0.58 per every Naira invested.

The study leads to the following recommendations:

(i)Farmers should form cooperatives groups and seek governments assistance towards improving their business through access to credit facilities and apositive policydefinition that would enhance the enterprises

(ii) Farmers should make sure that, day old chick they buy are of healthy breed and high quality .

(iii)Farmers should form cooperative society in order to be train in how to adjust their inputs accordingly to ensure efficient resource utilization.s

(iv)Extension agents in the State should be properly trained and provided with all necessary technological packages required to teach and guide farmers on improved poultry production.

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