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Challenges of Small Poultry Farms in Layer Production in Ibadan Oyo State Nigeria

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Abstract - The study assessed constraints to increased layers production among small-scale poultry farmers in Ibadan Area of Oyo State Nigeria. Data were collected using a multistage sampling technique to select 120 small-scale poultry farmers. Descriptive statistics (frequencies counts, percentages) were used to describe the socio-economic characteristics of the respondents. Correlation analysis was used to test the hypothesis. The Result shows that the mean age of the respondents was 48 years and majority (77.5%) of the farmers had higher education. Majority of the respondents (73%) practiced sweeping and packing of dirt in the poultry house as the daily routine management on their farms. The major constraint faced by the respondents was disease and pest attack (76.7%) followed by difficulty in credit and loan procurement processes (73.3%). Correlation analysis showed that there was significant relationship between income from sale of egg, number of birds raised and constraints to increased layers production among the small-scale poultry farmers ($r = 0.016, 0.014$ $P<0.05$).The study therefore recommends that Government should tackle the problem of loan/credit procurement, market price instability, disease and pest as well as proper funding of small-scale layers poultry business so as to enhance the commercialization of poultry industry in Nigeria.

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Abstract - The study assessed constraints to increased layers production among small-scale poultry farmers in Ibadan Area of Oyo State Nigeria. Data were collected using a multistage sampling technique to select 120 small-scale poultry farmers. Descriptive statistics (frequencies counts, percentages) were used to describe the socio-economic characteristics of the respondents. Correlation analysis was used to test the hypothesis. The Result shows that the mean age of the respondents was 48 years and majority (77.5%) of the farmers had higher education. Majority of the respondents (73%) practiced sweeping and packing of dirt in the poultry house as the daily routine management on their farms. The major constraint faced by the respondents was disease and pest attack (76.7%) followed by difficulty in credit and loan procurement processes (73.3%). Correlation analysis showed that there was significant relationship between income from sale of egg, number of birds raised and constraints to increased layers production among the small-scale poultry farmers ($r = 0.016, 0.014$ $P<0.05$).The study therefore recommends that Government should tackle the problem of loan/credit procurement, market price instability, disease and pest as well as proper funding of small-scale layers poultry business so as to enhance the commercialization of poultry industry in Nigeria.

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I. Introduction

Challenges of food insecurity and hunger worldwide and in developing countries like Nigeria in particular have continued to receive attention from experts and governments. (Emaikwu *et al.* 2011, FAO2003).Consequently, several conferences and world Food summit on human nutrition have brought to the fore deliberations on issue of eradicating poverty and hunger. FAO (1995) asserted that, the most critical in the global food basket crisis is animal protein. In Nigeria, the major source of animal protein is the livestock industry. Over the years, the contributions of the livestock sub sector to Gross Domestic Product (GDP) have decreased from 5.61% in 1960 to about 2.64% in 2010 (CBN 2010). The contributions of livestock to Agriculture in 1999 and 2010 remain at 2.64% (CBN, 2010). Livestock production constitute an important component of the agricultural economy in developing countries and it is an instrument of socio economic change, improved income and quality of rural life in Nigeria (Okumadewa 1999).

Poultry production as an aspect of livestock production is important to the biological needs, economic and social development of the people in any nation (Oladeebo and Ambe-Lamidi 2007). However, the contribution of poultry production (meat and eggs) to total livestock output increased from 26% in 1995 to 27% in 1999 with an increase in egg production alone accounting for about 13% during the period (Ojo, 2003).

The development of the poultry industry has also been described as the fastest means of bridging the protein deficiency gap prevailing in most of the developing countries. The poultry industry, if properly harness can also serve as a source of foreign earnings complementing crude oil which at present constitutes the main source of foreign earnings in Nigeria (The poultry site news 2009). In poultry production small-scale poultry production represents one of the few opportunities for saving, investment and security against risks. It accounts for approximately 90% of total poultry production (Branckaert 1999).

Despite the acknowledge importance of poultry production Akanni (2007) opined that it is characterized by low production level due to limited finance for the procurement of basic poultry equipment and materials. The result of this is that many of the small-scale poultry farmers are not encouraged to increase their productivity; thereby moving from small-scale production to a large scale production by small–scale poultry farmers encountered hindrances in the poultry industry which could be detrimental to increase poultry production. Based on this background, the study examined specifically the following objectives:

- Describe the socio-economic characteristics of the small-scale poultry farmers,
- Identify the daily routine management practices among small-scale poultry farmers,
- Examine perceived benefits to increased layer production among small-scale poultry farmers
- Examine constraints to increased layer production among small-scale poultry farmers.

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II. Hypothesis

There is no significant relationship between the socio-economic characteristics of the small-scale poultry farmers and the constraint to increased production among the small-scale poultry farmers.

III. Material and Method

a) Study Area

Oyo state is one of the states in South west Nigeria, Ibadan is the capital of Oyo state and the largest single city in southwest Nigeria. At Nigerian independence, Ibadan was the largest and most populous city in the country and the third in Africa after Cairo and Johannesburg. Ibadan is located in south-western Nigeria, 128 km inland northeast of Lagos and 530 km southwest of Abuja, the federal capital, and is a prominent transit point between the coastal region and the areas to the north. Ibadan has a population of 1,338,659 according to the 2006 census. Ibadan has a tropical wet and dry climate, with a lengthy wet season and relatively constant temperatures throughout the course of the year. Ibadan's wet season runs from March through October. The mean total rainfall for Ibadan is 1420.06 mm, falling in approximately 109 days. There are two peaks for rainfall, June and September. The mean maximum temperature is 26.46 C, minimum 21.42 C and the relative humidity is 74.55%.

b) Sampling Procedure and Sample Size

From the four agricultural zones in Oyo state Ibadan/Ibarapa zone was purposively selected because of the presence of small-scale poultry farmers in the zone. From the selected zone, 3 blocks was randomly selected. 2 cells was selected using simple random technique to make up 6 cells. Two villages was randomly selected from each of the 6 cells to make up 12 villages, from each of the 12 villages 10 small-scale poultry farmers was randomly selected to make up 120 small-scale poultry farmers. The total sample size for the study was 120 small-scale poultry farmers.

c) Measurement of Variables

Some of the important variables measured were:

Daily routine management practices: this was measured using 3 point scale ranging from Always = 3, sometimes = 2, Never = 1.

Perceived benefit was measured as Strongly Disagree =1, Disagree =2, Undecided = 3, Agree =4, Strongly Agree =5.

Constraints to increased layers production was measured with 3 point scale: Major constraint =3, Minor constraint =2, Not constraint =1.

d) Data Analysis

Data collected was subjected to descriptive and inferential statistics; frequency, percentages and means was used to describe data collected, while PPMC was used to test the hypothesis; to ascertain for any relationships between selected socio-economic characteristics of respondents and their constraints to increased layers production

IV. Result and Discussion

a) Socioeconomic Characteristics of the Respondents

Table 1 indicates that most (62.5%) of the respondents were between the ages of 21-40 years while 15.8% are between the ages of 41-60. This implies that small scale layers poultry farming is common among younger farmers unlike those who are above 60 years which represent 1.7% of the respondents in this study. The ages ranges from 21 to 40 years indicates that majority of the respondents were within the economically active age category and this is in line with Yinusa (1999) who observed that this age bracket contains the innovative, motivated and adaptable individuals. Table 1 indicates that 63.3 percent of the respondents were married while 29.2% and 7.5% are single and widowed respectively. Most (77.5%) of the respondents had higher education which could probably have encourage them to choose poultry farming not regarding the technicality involved in it although at a small-scale level. Most (63.3%) of the respondents had more than 2 people in the household. It implies that respondents with family size above 2 people would have more hands to work in their poultry which could aid increase in their output. Sonaiya (2007) stated that family poultry contributing 68.9% of the total poultry meat produced in Nigeria. Only 2.5 percent of the respondents generate above 60,000 naira per month from their poultry business. This agree with Akanni (2007) who stated that low income from poultry business is one of the constraints to increased productions faced by small scale poultry farmers.

Table1 also indicated the level of experience of the respondents; 65% of the respondents had less than 5 years' experience while 10% had above 10 years of experience. Little years of experience could be the reason for low layer production among the small-scale layer farmers. The knowledge on management, which is a key to profitable poultry production, is gained through years of experience of the poultry farmer (Fetuga 1992). Majority (99.2%) of the respondents were raising below 50 birds as the time of this research. According to Akanni (2007) most small-scale poultry farmers have limited finance to raise larger number of flocks.

b) Daily Routine Management Practices

Table 2 shows that 73 percent of the respondents always sweep and pack dirt's within and outside the layers house, 56 percent of them always clean the water troughs and refill it daily, 45.5 percent sometimes weigh and measure the quantity of feed

given to the layers. Although, 65.5 percent of the respondents sometimes cull unhealthy birds but 61.5percent of the respondents do not practice foot dip system at the layers house. This implication of this is that small scale poultry farmers sometimes ignore some management practices as not important which could have hazards effect on their layers production performances. Most (61%) of the respondents keep records of egg laid for the day, this will help them to have adequate knowledge of the number of egg produced and also know the likely number of layer that are yet to produce after reaching the laying age. Separation of cracked egg was one of the daily routine management practices carried out by 71 percent of the respondents. This is necessary so as to prepare the eggs that were not cracked for sale each of the day. Since, cleaning and preparing the egg for sale will generate income; most of the layers farmers would always be willing to engage in such management practices. Good management practices are the minimum care that is required to humanely maintain the birds. Caring for the birds and tending to their basic needs is a constant responsibility-24 hours a day, 7 days a week (Claucer, 2010).

Table 1 : Socio -economic characteristics of respondents

Variables	Frequency	Percentage
Sex		
Male	73	60.8
Female	47	39.2
Age (years)		
Less than 20	24	20
21 – 40	75	62.5
41 – 60	19	15.8
Above 60	2	1.7
Marital status		
Single married	35	29.2
Married	76	63.3
Widowed	9	7.5
Level of education		
No formal education	3	2.5
Adult literacy	1	0.8
Primary education	17	14.2
Secondary education	6	5.0
Higher education	93	77.5
Family size		
1	9	7.5
2	35	29.2
More than 2	76	63.3
Monthly income		
Less than 20,000	63	52.5
20,000 – 40,000	43	38.3
41,000 – 60,000	8	6.7
Above 60,0000	3	2.5
Years of experience		
Less than 5 years	78	65
5 – 10 years	30	25
Above 10 years	12	10
Number of birds		
20 – 30	68	56.7
31 – 40	25	20.8
41 – 50	17	14.2
51 – 60	10	8.3

Source : Field Survey (2012)

Table 2 : Daily Routine Management Practices

Daily Routine Management Practices	(A)%	(S)%	(N)%
Sweeping and packing dirts within and outside the layer house.	73.0	20.0	7.0
Thoroughly clean water troughs and refill with clean water.	56.0	40.7	3.3
Weigh/measure the quantity of feed given to the layers.	20.9	45.5	33.6
Add fresh feed into the feed troughs.	63.8	33.8	2.4
Collect eggs at least three times a day.	56.7	40.5	2.8
Keep records of eggs laid for the day.	61.4	33	5.6
Check for sick layers	25.5	66.8	7.7
Cull unhealthy layers from others.	29.2	65.5	6.3
check for mortality and remove them	47.5	51.5	1.0
Change the foot dip.	15.5	23	61.5
Record number of unhealthy birds and drug administered	23.3	19.2	58.5
Separate cracked eggs, leakers and thin-shelled eggs after gathering.	71.4	27.6	1.0

NB: A=Always. S=Sometimes. N=Never.

Source: Field Survey (2012)

c) Perception of the Layers Farmers on Benefit of Increased layer Production

From Table 3 most (60%) of the respondents strongly agreed that the increases in the number of layers will help to increase profit that will be made from the poultry business. More than half of the respondents perceived that increase in the layers production will increase the egg production, poultry meat availability and more poultry droppings would be produced which could be used as manure to boost agricultural production. They also agreed that increase in layer production will improves well-being of the farmer's household. Village chickens play a very important role in the livelihoods of those people keeping them. These chickens have a multitude of functions, and these include the many cultural and traditional roles, food and income generation (Scoones 1992; Kusina and Kusina 1999). At least 40 percent concurred that increase in layer production could create job opportunity because it will require more labour to handle the increase in the poultry business. Among the respondents (26.7%). strongly disagree that there is adequate government policy for that could support them to boost their layer production and 33.3% of the respondents also disagree that loans are easily accessed when their layer productions increases. This implies that the fact that one has a large number of egg producing birds do not guarantee that one will have access to loan. Some (20%) of the respondents strongly agree that with increase in layer production there is more possibility that they will have access to loan because their large number of birds can encourage the funders to finance their business.

Table 3 : Perceived Benefit to Increased production of Layers in the study Area

S.N	Perceived Benefits	SD Freq %	D Freq %	U Freq %	A Freq %	SA freq %
1.	Increase in number of layers increases profit/income.	2 1.7	33 27.5	2 1.7	23 19.2	60 50.0
2.	Increase in number of layers increases egg production.	15 12.5	20 16.7	8 6.7	31 25.8	46 38.3
3.	Poultry meat production increases with the increased number of layers reared.	16 13.3	15 12.5	18 15	48 40	23 19.2
4.	There is more supply of poultry droppings for manure with the increased number of layers reared which can boost organic agriculture.	26 21.7	5 4.2	25 20.8	38 31.7	26 21.7
5.	Well-being of the farmer and his family improves when the number of layers increases.	23 19.2	14 11.7	21 17.5	32 26.7	30 17.5
6.	Less amount of money is spent in transporting of the layers and eggs when the number of layers increases.	27 22.5	42 35	11 9.2	30 25.0	10 8.3
7.	Increase in the number of layers reared will improve the protein consumption rate in the economy.	20 16.7	38 31.7	11 9.2	38 31.7	13 10.8
8.	Loans and credits are easily accessed when the number of layers reared increases.	26 21.7	40 33.3	8 6.7	36 30	10 8.3
9.	There is adequate government policy intervention for poultry farmers rearing an increased number of layers.	32 26.7	28 23.3	19 15.8	25 20.8	16 13.3
10.	Job opportunities increases with the increase number of layers reared.	4 3.3	8 6.7	60 50	24 20.0	24 20.0

NB: SD = Strong Disagree, D = Disagree, U = Undecided, A= Agree, SA = Strongly Agree

d) Constraints to Increase of Layers Production

Table 4 Shows that 76.7% of the respondents poultry was faced with diseases and pest attack as a major constraint, this is probably because most of small scale poultry farmer could not identify the symptoms of disease earlier enough to prevent disease outbreak which is a major threat that wipe out many of the poultry in developing countries. Most (73.3%) of the respondents were also faced with uneasy access to loan and credit procurement; this was in line with reports of Agbato,1997; Akeeb, 1997; Adebayo and Adeola (2005) also confirmed that credit facilities or loans from financial institutions are not accessible to the poultry farmers in the rural area. Market price fluctuation and non availability of land and space were also pointed by the respondents as constraints to increase of layer production. Meanwhile, 56 percent of the respondents lack technical knowledge required in the poultry business, Olaniyi *et al.* (2008) opined that lack of technical knowledge is a major constraint that militates

against poultry production. More than 55.8 percent of the respondents indicated that rate of mortality of their laying is a major constraint to increase their layer production. This concurs with Chitate and Guta (2001) and Smith (1992) who also observe that mortality was the major constraint to village chicken productivity. Lack of quality ingredient for feed formulation was also indicated by 55.8 percent of the respondents to be a major constraint while 51.7 percent believed that the high cost of feed for their layering birds was a major constraint encountered which prevented them from increasing their layers production. The high cost of feed could be linked also to the lack of quality ingredient for feed formulation because the available quality ingredient may be costly and thereby affecting the price of the feed. The implication of this is that if the cost of feed is high and small scale poultry farmer could not afford it then it will affect the number of birds they can keep. Lack of feed for the mother hen and the chicks was the main reason for not confining poultry birds, chick confinement has been known to reduce losses from predators; however, it comes at a cost to the farmer in terms of increased feed (Sonaiya and Swan, 2004).

Table 4 : Constraints to Increase in Production of Layers

Constraints	Major Constraints Freq	%	Minor Constraints Freq	%	Not Constraints Freq	%
Disease and pest attack	92	76.7	27	22.5	1	0.8
Cost of drugs and vaccination	72	60.0	45	37.5	3	2.5
Market/price fluctuation	70	58.3	36	30.0	14	11.7
Accessibility of feed	51	42.5	45	37.5	24	20.0
Availability of labour	25	20.8	36	30.0	59	49.2
Unavailability of land/space	30	25.0	69	57.5	21	17.5
Difficulty in credit and loan procurement processes	88	73.3	20	16.7	12	10.0
Purchase of healthy day old chicks	65	54.2	36	30.0	19	15.8
Cost of feed	62	51.7	50	41.7	8	6.7
Rate of mortality of the layers	67	55.8	49	40.8	4	3.3
Packing and disposal of the layers droppings	56	46.7	48	40.0	16	13.3
Lack of quality ingredient for feed formulation	67	55.8	44	36.7	9	7.5
Lack of technical know-how in handling poultry	68	56.7	35	29.2	17	14.2

Source: Field Survey (2012)

e) Possible Solutions to the Constraints to Increase Layers Production

Table 5 indicates the respondents' likely solution to the various constraints that affect the increase in production of layers. About 50 percent of the respondents indicated that provision of easy access to loan procurement will proffer solution to the constraints they are facing in increasing layer production. This is in line with Haruna *et al.*(2007) who opined that small-scale layer farmers do not have adequate capital and resources to expand their scale of operations. Some (24.2%) of the respondents pointed out that stable market price for the sale of egg could also encourage poultry farmers to increase their production since they are assured that they will be able to sell there eggs at a good price to the people irregardless of season they produce more egg because there is stable market price for the sale of egg. Provision of adequate land and space for poultry production was suggested as a solution by 16.7 percent of the respondents, although it is a few proportion that indicated that provision of land/space will assist in increasing layers poultry production but it is a vital suggestion because without land, poultry farms cannot be established and where it is proposed to be sited close to residential buildings most of the times the residents of such area protest about the location of poultry in their neighbourhood. Knowledge and technical know-how in any business is very important so as to be able to handle such business properly and efficiently, 10.8 percent of the respondents indicated that adequate training should be provided so as to educate and enlighten the farmers. Meanwhile, only 4.2% of the respondents indicated that the provision of quality ingredients for poultry feed will proffer solutions to the constraints faced by the farmers.

It is probably because many of the small-scale poultry farmers mostly at times purchase feed they utilized for their birds. So if there is more supply of the quality ingredient for formulation and compounding, then the constraint of high cost of feed may reduce and the respondents will be able to buy either more of the ingredient for feed compounding or buy more feed to nourish their laying poultry birds production.

Table 5 : Possible Solutions to the Constraints to Increased Layers Production

Possible Solutions	Frequency	Percent
Easy access to credit/loan procurement	53	44.2
Stable market price for sale of egg.	29	24.2
Provision of adequate land/space for poultry production	20	16.7
Provision adequate training in handling poultry	13	10.8
Provide quality feed ingredients	5	4.2

Source: Field Survey (2012)

f) Result of Correlation Analysis

The result of correlation analysis shows that there was significant relationship between number of birds raised, income from sale of eggs and constraints to increased layer production. The implication is that the larger the size of layers raised by the poultry farmers impinge on the constraints encountered in increasing their layers poultry production. Likewise, if the income from sale of eggs is much and increasing, there is tendency that the small sale poultry farmers would be willing to increase their layer production regardless of the constraints to increased poultry production. The age, years of experience and family size of the respondents were not significantly related to constraints to layers production. The age of the small scale poultry farmers and years of experience in the layer poultry business cannot prevent or reduce the kind of constraint them will encounter whenever they intend to increase their layers production.

Table 6 : Result of Correlation Analysis

Variable	Coefficient (r)	p-value	Decision
Age	0.301	0.786	NS
Years-of experience	0.011	0.904	NS
Number of Birds raised	0.226	0.014	S
Income from sale of eggs	0.220	0.016	S
Family size	-0.025	0.405	NS

S=Significant NS=Not Significant *Source: Field Survey (2012)*

V. Conclusion and Recommendation

Challenges facing the small poultry farms especially the layers poultry farms impede the willingness of the poultry farmer to increase their production. The study established that majority of the respondents in the study area were young and educated which could help them to be innovative. They also perceived that there would be increase profit if they can increase their layer production which could help them to improve their wellbeing and raise their standard of living. Meanwhile some of the daily management practices that could promote hygiene were ignored and the major constraints that militating the increase of layer production as identified by this study were disease and pest outbreak, non availability of credit/loan facilities as well as the lack of technical know-how to handle the poultry profitable. It is therefore recommended that small-scale layer poultry farmers should be encouraged to form cooperative societies or join the existing one to be able to access loan to their business and government could also make fund available to assist the layers poultry farmers. Capacity training of poultry farmers to enable them to cope with the challenges of modern poultry farming and commercialization of small scale layers poultry production should be carried out.

Government should make policies specifically for transformation of the small scale poultry industry. This will assist in removing the challenges of small poultry farms and thereby creating a favourable environment to increase layer production among small holder poultry farmers.

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