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Influence of Poultry Feed Dynamism on Eggs Production in Odogbolu Local Government Area of Ogun State, Nigeria

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ABSTRACT

This study was carried out to assess the influence of poultry feed dynamism on eggs production in Odogbolu Local Government Area of Ogun State, Nigeria. Data were collected with the aid of interview guide. A multi stage sampling technique was used to select ninety respondents. The result revealed that 78.90% of the respondents were male, 91.10% of them were married with mean age of 37 years. The results also showed that 95.6% of the respondents did not have access to extension agents to obtain information. The finding also shows that all (100%) the respondents practiced feed dynamism because of poor feed scarcity. The result of the correlation revealed that poultry feeding practices had significant but inverse relationship on eggs production ($r = -0.25$ $p < 0.05$). Chi-square result also showed that the high cost of feed ($\chi^2 = 8.72$, 0.03), limited availability of feed ($\chi^2 = 15.8$, 0.00), and age of birds ($\chi^2 = 11.62$, 0.02) were positively significant to egg production. The study concluded that feeding practices had significant influence on eggs production. The study therefore recommend that Government should promote poultry farmers' education through adequate finding of extension service in the study area.

Keywords:

influence, poultry, feed dynamism, eggs, production

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Introduction

Protein is an important component of human diet that is required for the growth of cells, tissues and development, and optimal functioning of the body system. It accounts for 20% of the total body and it can be from plant or animal sources. The animal protein includes red meats, poultry, fish, eggs, and so on. Among these sources of protein, egg is the cheapest and most available quality protein source that is often recommended for human consumption especially the children. It contains about 6 grams of high quality protein, the white and yolk of an egg are rich in nutrients, vitamins and minerals (Lippincott and Wilkins 2008). Feeding is an important aspect of any commercial poultry enterprise and it accounts for up to 70% of the total cost of egg production (Afolayan and Afolayan, 2008). Poultry feeds are made primarily from a mixture of several feed stuffs such as cereal grains, soya bean meal, animal by-products meals, fats, and vitamin and mineral premixes (Alimon and Hair-Bejo, 1995). Feed dynamism is characterized by continuous change in feeding practices among poultry farmers. Feeds are categorized as starter mash, grower mash layers mash. Poultry farming is an important enterprise because of its close links with grain and feed sectors. Feeds are an important determinant of eggs output (Ajetomobi and Binuomote, 2006). It is a major component of total cost of bird's production (Donald and Williams 2002). Yet, literature on feed dynamism and its effect on eggs production is scanty. It is against this background that this study assessed the influence of poultry feed dynamism on eggs production in Ogun State, Nigeria.

Specific objectives are to:

1. describe the socio-economic characteristics of poultry farmers in the study area.
2. identify the poultry farmer's sources of information and training on poultry management and feeding in the study area.
3. investigate the poultry feeding practices carried out by the poultry farmers in the study area.
4. examine the level of eggs production due to change in feed in the study area.
5. ascertain the reasons for feed dynamism among the poultry farmers in the study area.

Hypothesis

H_{01} : There is no significant relationship between poultry feeding practices and eggs production in the study area.

Sampling Techniques and Sample Size

The study was carried out in Ogun State, Nigeria. Ogun State is one of the six states in southwest Nigeria. Odogbolu Local Government Area was selected and it is one of the twenty LGAs in Ogun State, Nigeria. The LGA covers 541sqkm lying between $6^{\circ} 50'N$ $3^{\circ} 46'E$ / $6.833^{\circ}N$ $3.767^{\circ}E$. It was divided into 15 wards. The population of this study was all registered poultry farmers in Odogbolu Local Government Area of Ogun State. Multi stage sampling technique was used in selecting the respondents (poultry farmers) for this study. In stage 1, simple random technique was used to select six wards out of the fifteen wards in Odogbolu LGA. The selected wards are; Aiyeye, Idowa, Odogbolu 1, Odogbolu 1i, Omu and Ososa. In stage two, simple random technique was used to select 60% of 150 registered poultry farmers under the Poultry Association of Nigeria (PAN) from each of the selected ward and this gave a total of 90 poultry farmers as sample size for this study.

Data Collection Method

Data were collected with the aid of a well-structured interview guide and Focus Group Discussion. The interview guide was subjected to face and content validity by consulting experts in the field of Agricultural Extension and Rural Development. Items found ambiguous and lacking in clarity were eliminated. Reliability of the instrument was done using test re-test method at interval of two weeks with poultry farmers that were not part of this study. The reliability result was 0.96 indicating that the instrument was reliable.

Measurement of Variables

Age and poultry experience was measured at ratio level while education, sex and marital status were measured at nominal level.

Data Analysis

Table 1: Distribution of respondents based on their social economics characteristics (n=90)

Variables	Frequency	Percentage (%)	Mean	Standard Deviation
Age				
≥30	29	32.20	37.00	7.79
31-40	36	40.00		
41-50	24	25.60		
51 and above	02	2.20		
Sex				
Male	71	78.90		
Female	19	21.10		
Education Status				
No formal education	01	1.10		
Primary education	20	22.20		
Secondary education	36	40.00		
Tertiary education	33	36.70		
Marital Status				
Single	08	8.90		
Married	82	91.10		
Household Size				
1-4	41	45.60	6.00	3.00
5-8	47	52.20		
9 and above	02	2.20		
Farming experience(years)				
≥5	52	57.80	5.70	3.20
6-10	30	33.30		
11 and above	08	8.90		
Poultry farm size (pen)				
1-2	88	97.80		
3 and above	02	2.20		
Number of birds owned				
≥500	25	27.8	957.3	102.3
501-800	11	12.2		
801 and above	54	60.0		
Poultry monthly income (₦)				
≥100,000	46	51.10	99,590	59,423.23
101,000-200,000	40	44.40		
201,000 and above	04	4.40		
Religion				
Christianity	62	68.90		
Islam	28	31.10		
Traditional	0	0.00		
Non-farm Income activities				
Trading	50	55.50		
Civil service	40	44.40		

Source: Field Survey, 2015

Table 2: Sources of information on poultry management and feeding practices (n =90)

Sources of information/training	Always used	Occasionally used	Not used
Fellow poultry farmers	72(80.00)	18(20.00)	0(0.00)
Extension agents	1(1.10)	3(3.30)	86(95.60)
Friends and neighbours	80(88.90)	9(10.00)	1(1.10)
Poultry farmer union	88(97.80)	1(1.10)	1(1.10)
Radio	0(0.00)	7(7.80)	83(92.20)
Television	2(2.20)	37(41.10)	51(56.70)
Others(seminars/Poultry consultant/ Vet service)	51(56.70)	29(32.20)	10(11.10)

Source: Field survey, 2015. *Values in parenthesis are in percentages.

Table 3: Distribution according to Poultry feeding practices (n = 90)

Feeding Practices	Frequency	Percentage (%)
Times of Feeding birds daily		
Thrice	32	35.6
Twice	58	64.4
Once	0	0.00
Changing of feeds		
Always	14	15.6
Occasionally	76	84.4
Not at all	0	0.00
Brand of poultry feed commonly used		
Top feeds/Animal care/Amo Byng feeds	10	11.1
Top feeds/Amo Byng feeds/FA feeds	45	50.0
Top feeds/Animal care/FA feeds	16	17.8
Top feeds/Animal care/Amo Byng/FA feeds	19	21.1

Source: Field Survey, 2015

Descriptive statistics such as percentage, mean and frequency distribution were used to analyze the socio-economic characteristics of the respondents while Pearson Product Moment Correlation (PPMC) and Chi-square analysis were used to test the hypothesis.

Results And Discussion

The result in Table 1 showed that the mean age of the respondents was 37 years. Majority (72.2%) of the respondent were less than 40 years. This reveals that the poultry farmers are still within the economic active age bracket. This is in line with Oyeyinka *et al.*, 2011 which says that poultry farmers are within the active age range. Most (78.90%) of the respondents were males while only 21.10% were females. This indicates that males are predominant in poultry production in the study area. This can be attributed to the fact that poultry production is stressful and full of risks which discourage many women going into it. About sixty percent of the respondents had been in poultry production in less than 5 years, while 33.30% of the respondents had spent between 6-10 years in poultry production. This means that the respondents are not new in poultry production practices in the study area. The result also showed that 22.20% of the respondents attended primary school, while 40% had secondary school education and 36.70% had tertiary education. This show that most of the poultry farmers had one form of formal education or the other which encourages poultry farmers to make good decision concerning feed, drug, vaccine, and poultry management. This is in line with Oyeyinka *et al.* (2011) that majority of the poultry farmers might have acquired knowledge and skill involved in poultry production through various forms of education they acquired during schooling. Most (91.10%) of the respondents were married, while 8.90% were single. More than half (52.20%) of the respondents had 5-8 people, while 45.60% had 1-4 people. This shows that the household size of the respondents were relatively small. Many (60.0%) of the respondents had more than 801 birds, while 27.8% had less than 500birds and 12.2% had between 501-800 birds. This implies the poultry size is relatively large, hence it is on commercial scale.

Sources of information on poultry management and feeding practices

Results in Table 2 revealed that most (80.0%) of the

poultry farmers always got their information on poultry managements and feed practices from fellow poultry farmers. Poultry Farmers Union (PAN) played a useful significant role in sourcing information on poultry management and feeding practices as almost all (97.8%) respondents accessed information through the union, while 95.6% of the poultry farmer have no access to source information through extension agents in the study area. This implies that extension services and research institutes have not been an effective means of disseminating information on poultry management and feeding practices in the study area.

Distribution according to Poultry feeding practices

Result in Table 3 showed that majority (64.4%) of the respondents fed their birds twice daily, while (35.6%) fed their birds thrice daily, and 84.4% of the respondents occasionally changed their feeds, 15.6% always changed their poultry feeds. The common feed brands and combination of poultry feeds used by the poultry farmers were Top feeds, Amo Byng feeds, FA feeds and Animal care feeds. Fifty percent of the poultry farmers used Top feeds/Amo Byng feeds/FA feeds, 21.10% used Top feeds/Animal care/Amo Byng feeds/F.A feeds, while 17.8% used Top feeds/Animal care/FA feeds and 11.10% used Top feeds/Animal care/Amo Byng feeds. From the result it was revealed that all of the poultry farmers used Top feed in their feed combination.

Eggs production in crates before change in feeds and after change in feeds from October to December 2014

The result in Table 4 shows that 54.5% of the respondents got less than 400 crates of eggs while 27.3% got 401-800 crates of eggs. When new feed was introduced, majority (69.7%) of the poultry farmers got less than 400 crates of eggs while 9.1% got between 801-1200 crates of eggs. It also show that changing in feed affect the level of egg production and as those that got above 1,200 crates of eggs decreased. In December 2014, the respondents changed their feeds, prior to change in feed 47.4% of the poultry farmers got less than 400 crates of eggs while 26.3% got between 401- 800 crates of egg. When new feeds were introduced 36.8% of the poultry farmers got 401-800 crates of egg while 26.3% got less than 400 crates of eggs, 21.1% got 1,201 crates of eggs. However, the poultry farmers responded to the shortfall through

Table 4: Level of eggs production in crates before change in feeds and after change in feeds from October to December 2014

Egg crates before changing the feed	FP	Egg crates after changing the feed	FP
October	(n=38)		
≥400	16(42.1)	≥400	22(57.9)
401-800	10(26.3)	401-800	08(21.1)
801-1200	07(18.4)	801-1200	05(13.2)
1201 and above	05(13.2)	1201 and above	03(7.8)
November	(n=33)		
≥400	18(54.5)	≥400	23(69.7)
401-800	09(27.3)	401-800	06(18.2)
801-1200	04(12.1)	801-1200	03(9.1)
1201 and above	02(6.1)	1201 and above	01(3.0)
December	(n=19)		
≥400	09(47.4)	≥400	05(26.3)
401-800	05(26.3)	401-800	07(36.8)
801-1200	02(10.5)	801-1200	03(15.8)
1201 and above	03(15.8)	1201 and above	04(21.1)

Source: Field Survey, 2015 FP- Frequency and Percentage *Values in parenthesis are in percentages

Table 5: Distribution Based on the Reasons for poultry feed dynamism (n=90)

Reasons for poultry feed dynamism	Yes	No
High cost of feed	32(35.6)	58(64.4)
Limited availability of feeds	90(100.0)	0(0.00)
Quality of feed	90(100.0)	0(0.00)
High cost of transportation	19(21.1)	71(78.9)
High cost of raw material	82(91.1)	08(8.9)
Age of birds	82(91.1)	08(8.9)

Source: Field survey, 2015. *Values in parenthesis are in percentage.

Table 6: Relationship between poultry feeding practices and egg production.

Variables	r	p-value	Decision
Poultry feeding practices	-0.25	0.02	S

Source: Field survey, 2015 S= significant at $p < 0.05$ level

drugs administration like deworming, lasota vaccine, antibiotics and multivitamin to boost the eggs production in the study area.

Reasons for poultry feed dynamism

Result in Table 5 showed that all (100.0%) the poultry farmers highlighted that limited availability of feed make them change to another brand of feed and the quality of feed was another reason in the study area. Long, 1984; Alimon and Hair-Bejo, 1995 stated that poultry feeds are made primarily from a mixture of several feedstuffs such as cereal grains, soya bean meal, animal by – products meals, fats and vitamin and mineral premixes. Anything short of this mixture reduces the feed quality. Most (91.1%) of the poultry farmers highlighted that high cost of raw material, high cost of transportation from the store (21%) were the reason for feed dynamism. In support of this finding, Kersten *et al.* (2005) stated that the raw material incorporated into modern poultry feeds are continually changing over time due to a number of factors such as price changes, availability of raw materials, customer's supply and demand.

Test of Relationship between poultry feeding practices and egg production

H_{01} : There is no significant relationship between poultry feeding practices and egg production in the study area. From the result in Table 6 poultry feeding practices were significant ($r = -0.25$, $p < 0.05$). The poultry feeding practice with negative sign had an inverse relationship with the eggs production. Therefore, there is significant relationship between poultry feeding practices and egg production in the study area.

Conclusion

From the results it was concluded that male are predominant in poultry production in the study area. Feed dynamism affected eggs production and consequently farmer's income in the study area.

Recommendations

The following recommendations are suggested to improve egg production:

i. Government should support poultry farmers' education through adequate funding of extension service in the study area.

ii. Provision of alternative raw materials should be made available to the poultry farmers at low cost by the field industries.

iii. Poultry farmers should form cooperative so that they can purchase corn in bulk to minimize cost of production.

iv. Poultry farmers should as well go into integrated farming whereby they will cultivate maize to supplement the poultry feeds that are available in their vicinity.

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