GROSS MARGIN ESTIMATION OF RURAL POULTRY PRODUCTION IN OSUN STATE, NIGERIA.

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ABSTRACT

A Survey was conducted to obtain information on profitability of rural poultry production in Osun State. Two villages each from five Local Government Areas were studied. One hundred poultry keepers served as the respondents to a structured questionnaire. Numerical data were analyzed using descriptive statistics. Average flocksize was 17 birds and average feed supplementation cost per bird per month was ₦ 7.70. Basket coops were the common type of overnight housing provided and the depreciated cost was about ₦0.103 per bird per month. The average price of a mature cock was ₦79, hens and growers cost ₦29, respectively. The farmers were willing to pay ₦4.30 per bird for vaccination against Newcastle disease and ₦6.70 per Kilogram of compounded feed. Gross margin estimation shows that the farmer realised a positive margin of ₦4.50 from the sale of growers at 3 months of age and ₦9.00 and ₦30.00 on hens and cocks, respectively, when sold at 6 months of age.

Key words: Rural poultry, Gross margin, Osun State.

INTRODUCTION

Poultry products provide the greatest potential for bridging the protein availability gap because of the short generation intervals. This also gives poultry the quickest and highest turnover rates when compared to other livestock. Traditionally, the chickens are kept under the extensive system characterized by scavenging in the village surroundings with little or no inputs by the owners. A recent survey of livestock populations in Nigeria (FLDPCS, 1991) showed that of the total poultry population in the country, 69% were chickens. 94% percent of those chickens were traditionally managed in the village. The report showed that the bulk of chickens

produced in the country are from the villages, and as such, village chicken production should be given due consideration. Development efforts date back to 1919 (Sonaiya, 1989). Sonaiya (1990) observed from surveys, study visits, on-station and on-farm research that the problems of small holder poultry production though many, revolve around disease control, feed supplementation and housing.

In developing the rural poultry production system, a proper understanding of the system is necessary. To this end, quite a lot of information has so far been obtained from surveys conducted in various regions of the country (Otchere *et. al.*, 1990 for North Central; Hassan *et. al.*, 1990 for Eastern and Middle belt; Eshiett and Okere, 1990 for South East; Sonaiya and Olori, 1990; Idowu, 1992 South West). These surveys have focused mainly on the system of production and obtained such information as number of clutches per year, average clutch size, percent hatchability and average flocksize. Information on costs of production have not been collected.

This study was therefore designed to obtain and analyze information for estimating gross margin in the extensive rural poultry production system in Osun state.

MATERIALS AND METHODS

Data collection was by personal administration of a questionnaire designed to obtain information on respondent characteristics, flock and production characteristics and some economic aspect of production. The questionnaire was translated to the local language (Yoruba) in which the questions were posed. The responses were however recorded in English.

The survey was conducted in September and October 1993 after a pre-test in two

villages. A state map was used in purposively selecting five Local government Areas (L.G.A.s.) to represent the state. Ejigbo and Irepodun L.G.A.s. from the north, Ede L.G.A. from the centre, Ife South L.G.A. from the south and Irewole L.G.A. from the south west of the state. Two villages that did not have social amenities such as electricity, pipe borne water and good roads were chosen in each Local Government Area. The first ten poultry keepers who were willing to respond were interviewed in each village. A total of 100 respondents were thus used. The interviews were conducted in the evening when the respondents had returned from the day's activities. A top-loading weighing scale (Waymaster Model 1005 k) was used to weigh the quantity of grain supplements (corn and guinea corn) that the respondents offered their flocks daily.

Numerical data obtained were analyzed using arithmetic means, ranges, standard deviations and proportions. The analyzed data were used in estimating the gross margin as follows:

Quantity of grain supplements offered/bird/day (g)

$$= \frac{\text{Total weight of supplements offered daily (g)}}{\text{Average flocksize}}$$

The average cost of a measure (Kongo) of grains supplements (corn and guinea corn) was recorded and expressed as cost per kilogram of grains.

Margin = Selling Price of Output - Total Variable Cost Incurred

Total variable cost = Cost of grain supplements offered + Cost of drugs administered + depreciated cost of shelter provided. Cost of grain supplements offered/d = Cost of grain supplements

(N/g) x Quantity of grain Supplements (g) x Flocksize. Annual Cost of offering grain supplements (bird) = Average Cost of grain Supplements (/g) x 365 days. Annual cost of providing shelter (N/bird/year)

$$\frac{\text{Average cost of basket coops x Number of coops used/year}}{\text{Average flock size}}$$

RESULTS AND DISCUSSION

The results obtained indicate that 81% of the respondents started production with growers while 12% of them started with hens. Eighty-three percent of the respondents purchased their foundation stock. The average flock was composed of 4 cocks, 4 hens and 7 growers (Table 1). The respondents' flocksize ranged between 2 and 80 birds with an average of 17 birds. This agrees with the average flocksize of 16 birds reported by Idowu (1992). It however differs from the modal range of 6-10 reported by Sonaiya and Olori (1990) whose survey covered the south western region of Nigeria, of which Osun State is a part.

Ninety-eight percent of the respondents offered grain supplements to their flock and 95% of the respondents purchased these grain supplements. Most of the respondents (53%) offered these grain supplements three times a day (morning, afternoon and evening). They were of the opinion that the birds, like human beings should eat three times a day. 31% of the respondents offered supplements twice a day (morning and afternoon) after releasing the birds from the overnight shelter provided. Corn and guinea corn were the main grain supplements offered to the birds. At the time of the survey (Sept/Oct, 1993), average cost of corn was ₦10.80 per Kg and guinea corn cost ₦10.30 per Kg. An average of 25.9 grams of grain supplements was estimated to be offered per bird per day (Table 2). On the average, it costs about ₦4.30 to feed a flock of 17 birds daily. Drugs meant for treating ailments in human beings were used by 48% of the respondents when their birds showed any disease symptoms. The drugs were mainly antibiotics and pain relievers and cost an average of ₦ 1.20 per unit i.e capsule or tablet. Averagely, 8 units of these drugs were administered per month and this cost ₦0.57 per bird per month. 78% of the respondents provided basket coops for their birds and these cost an average of ₦ 14.00. The average farmer uses two of such baskets for his flock.

GROSS MARGIN IN RURAL POULTRY PRODUCTION
TABLE 1: AVERAGE SIZE AND COMPOSITION OF FLOCK.

L.G.A.	Flocksize		Flock Composition			
	Mean	S.D.	Cocks	Hens	Growers	Chicks
Ede	16.5±14.2		3.5±2.3	4.0±4.5	6.7±4.1	9.1±7.4
Ifè South	14.7±10.1		3.8±1.7	3.0±1.6	5.4±3.8	7.9±7.1
Irewole	16.9±11.2		4.2±3.3	4.0±3.4	5.2±1.9	8.8±2.6
Ejigbo	18.5±17.3		3.8±2.3	4.2±3.3	6.7±1.9	8.5±7.1
Irepodun	16.2±13.6		4.1±2.5	3.3±3.1	7.2±5.4	7.8±6.2
Average	16.5±13.6		3.8±2.5	3.7±3.3	6.5±5.3	8.4±6.2

SOURCE: Field Survey Sept/Oct 1993.

TABLE 2: AVERAGE QUANTITY AND COST OF GRAIN SUPPLEMENT OFFERED

L.G.A.	AVERAGE QUANTITY OF GRAIN		AVERAGE COST OF GRAIN	
	SUPPLEMENTS OFFERED(g) CORN	GUINEA CORN	CORN	SUPPLEMENT (N/Kg)* GUINEA CORN
Ede	9.3±9.9	6.9±8.4	8.8±1.4	8.9±1.5
Ifè South	24.9±28.4	6.5±6.7	10.9±2.2	12.1±3.7
Irewole	21.8±30.6	7.5±13.3	11.9±1.4	10.8±1.1
Ejigbo	13.4±11.5	7.4±8.1	11.8±2.5	10.2±2.0
Irepodun	13.2±10.3	11.0±6.8	11.8±3.9	9.1±2.6
Average	19.4±21.3	11.0±13.3	10.8±2.6	9.1±2.8

* SEPT/OCT 1993 NAIRA
 SOURCE: Field Survey Sept/Oct 1993.

Although, some respondents (17%) were not in a position to give how much they would be willing to pay, majority (83%) were willing to pay an average of ₦6.70 per Kg for compounded feed and ₦4.30 per bird for vaccination against newcastle disease (Table 3). Average product prices are as shown in Table 4. Cocks cost an average of ₦79 while hens and growers cost about 75% and 37.5% the price of a cock, respectively.

ESTIMATION OF GROSS MARGIN

In rural poultry production, the variable costs are the costs of supplements offered to the flock, depreciation of shelter and the drugs administered. The fixed costs are the cost of shelter and the cost of purchasing the foundation stock. The cost of offering grain supplements was estimated to be ₦7.20/bird/month while the depreciated cost of shelter was ₦0.103/bird/month. An average of 8 units of medications are administered per month and this brings the cost of medication per bird per month to ₦0.57.

In estimating the gross margin, growers were assumed to be sold at 3 months of age by

which time they would be old enough to serve as replacement stock. Cocks and hens were also assumed to be sold at 6 months of age by which time they would be mature for sale or breeding purpose. The total variable cost incurred on each grower at 3 months was ₦24.50. The average selling price of a grower was ₦20.00. The farmer, on the average then makes a positive margin of ₦4.50 per grower. For the hens and cocks sold at 6 months, the total variable cost incurred was ₦49.00/bird. The average selling price of a cock and a hen are ₦79 and ₦58, respectively. Margins of ₦9.00 and ₦30.00 estimated from the sale of a hen and cock, respectively, at 6 months of age. Higher margins are made from cocks because of the high prices at which they are sold. This is as a result of a high demand for cocks which are more often used for sacrifices and more often preferred for entertaining guests. Pullets raised for sale are better sold at about 3 months of age (i.e. as growers) since only double the margin is made. When sold at 6 months, when sold at 3 months, there is a lower level of risk involved in terms of death

TABLE 3: AVERAGE PRICES THE RESPONDENTS COULD AFFORD FOR CONVENTIONAL FEED AND VACCINATION AGAINST NEWCASTLE DISEASE

L.G.A.	FEED (N/Kg)* MEAN S.D.	VACCINATION (N/Bird)* MEAN S.D.
Ede	6.3 ± 3.5	4.5 ± 2.1
Ife South	7.0 ± 2.6	4.4 ± 1.9
Irewole	7.3 ± 1.6	4.8 ± 1.3
Ejigbo	6.5 ± 2.8	3.9 ± 1.2
Irepodun	5.9 ± 2.3	3.8 ± 1.3
Average	6.7 ± 2.2	4.3 ± 1.6

* SEPT/OCT 1993 NAIRA

SOURCE: Field Survey Sept/Oct 1993

TABLE 4: AVERAGE PRODUCT PRICES (N;SEPT)

L.G.A.	COCKS	HENS	GROWERS
Ede	103 ± 48.4	69 ± 31.7	34 ± 15.5
Ife South	75 ± 17.3	55 ± 22.9	25 ± 7.3
Irewole	83 ± 21.0	55 ± 11.7	29 ± 11.1
Ejigbo	61 ± 12.3	51 ± 8.8	28 ± 6.9
Irepodun	65 ± 15.9	59 ± 20.2	28 ± 4.2
Average	79 ± 26.6	58 ± 21.1	29 ± 9.8

Source: Field Survey Sept/Oct. 1993

from disease or accident. For cocks, however, the higher margin obtained when they are sold at 6 months offset the risk.

CONCLUSION

Under the existing production system, where birds are kept mainly for sale, cockerels should be left to grow to maturity (ie. 6 months of age) before they are sold. Pullets should be sold at 3 months of age if they are not be used for breeding purposes. The sale of eggs is a much better means of increasing the margins obtainable from this production system and it should be encouraged as there are no variable costs incurred and little or no risks involved.

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