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Economic Cost and Profit Analysis of Poultry Industry in Mahendergarh District of Haryana

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Abstract

Poultry farming in India has transformed from a mere tool of supplementary income and nutritious food for the family to the major commercial activity generating the required revenue. Changing food habits, rising income of the middle class Indian, presence of private players, rising market demand of the Indian poultry produce in the export market are some of the contributing factors to the growth of the industry. Therefore, the study intends to examine the socio-economic background of the poultry farmers; to analyze the investment, cost and profit of the farmers and to identify the problems faced by the farmers. The study based on primary data collected from 25 poultry farmers (broiler farming) by adopting purposive sampling during November 2019 to January 2020. Cost of feeding constitutes a major problem to most of the poultry farmers as it accounts for a larger percentage of total cost of production.

Key words : Broilers, feed cost, cost and returns.

Poultry farming refers to the raising of domesticated birds for the purpose of farming meat or eggs for food. Poultry farming in India was mostly a backyard venture till 1960s. India is the 5th major producer of broiler after the United States, Brazil, the European Union and China, with an annual production of 3,625 thousand metric tons (USDA Report, 2014). The broiler industry is growing at a rate of 10-12% per annum. Major drivers of consumption are an expanding middle class, increasing employment levels and incomes, new demand for ready-to-eat products and the growing presence of affordable quick service restaurants, and a general preference for poultry meat over other meats due to low prices and cultural and religious non preferences for pork and beef. A moderate shift in the consumption pattern from vegetarianism to non-vegetarianism is also helping the industry by increasing the demand for poultry products.

Chickens raised intensively for meat are often called Broilers. Broilers are floor-raised on litter such as wood shavings or rice hulls, indoors in climate-controlled housing. Under modern farming methods, meat chickens reared indoors reach slaughter weight at 5 to 6 weeks of age. Broilers are not raised in cages. They are raised in large, open structures known as grow out houses which are equipped with mechanical systems to deliver feed and water to the birds. They have ventilation systems and heaters that function as needed.

The important poultry growing states in India are Andhra Pradesh, Tamilnadu, Madhya Pradesh, Gujarat, Haryana, Maharashtra and Punjab. Andhra Pradesh is the biggest producer of poultry meat and Haryana has been growing at the highest rate in last few years. Farm poultry is dominant in Haryana. The main hubs of broiler production are Jind, Panipat, Hisar, Fatehabad, Sirsa, Karnal, Kaithal and Yamunanagar. In Mahendergarh district, the demand for egg and chicken meat is increasing commendably. It has transformed from a mere backyard activity into a major commercial

activity. The poultry industry also provides employment to large number of people directly or indirectly. In order to attain the favourable FCR (feed conversion ratio), small and medium farms heavily rely on antibiotics. Use of antibiotics is considered an easy and most economical solution for high profitability. Bigger farmers are aware about the importance of bio-security measures such as those linked with prevention of infection and reducing stress among the broilers. They are capable to have much needed infrastructure and resources such as computerized ventilation systems and closed sheds for better temperature and humidity control; better waste and dead bird disposal systems; testing toxins in feed and restricting access to broilers.

Objectives of study

The main objectives of the study includes

- Assessment of socio - economic status of the selected farmers
- Analysis of investment, cost and profit of the broiler poultry farmers

Methodology

To achieve the objectives, the present study was conducted in Mahendergarh district of Haryana. The primary data was collected from 25 sample farmers which included data on general information of the farmers, input particulars, various costs involved, financial and infrastructure arrangements, particulars of production, returns and also the constraints faced by broiler farming. The data was obtained from the selected farmers with the help of a well-structured schedule. It includes tabulation of collected data using simple averages and percentages in order to facilitate easy comparison.

Ratio analysis

Ratio analysis includes feed conversion ratio (FCR), benefit-cost ratio which was calculated to know the viability of the business.

- Feed conversion ratio (FCR) = Feed given per bird /Average body weight
- Benefit cost ratio (B: C ratio) = Gross returns from output sale /Total input costs

Terms and concepts used in the study:

Variable costs : The variable costs include costs incurred on variable inputs such as feed, day old chicks, medicines and vaccines, labour, litter material, supplementary feeds, water and electricity charges, repairs and maintenance, transportation and interest on working capital.

Interest on working capital : This was calculated at the rate of 11 per cent per annum for the duration of a production cycle.

Fixed costs : These include interest on fixed capital, rental value of land and depreciation on poultry shed and poultry equipments. Interest on fixed capital was calculated at the rate of 11 per cent on the total cost incurred on shed construction and equipments.

Broiler : A young bird of either sex, up to seven to nine weeks of age and weighing about 2 - 2.8 Kg usually of the meat type breeds.

DOC : A day old chick sent immediately for rearing just in a day after hatching.

Litter material : Accumulation of materials or a single type of material like rice husk is used as bedding material.

Flock size : Total number of birds reared per batch.

Results and Discussion

In consistence with the objectives of the study, the necessary data collected from different sources was analysed and interpreted. Average

flock size in the study area is of 18000 birds. Various analytical tools were employed for analysis of collected data. Tabular analysis was done by working out simple averages and percentages. For economic analysis the variable costs and fixed costs were considered to arrive at the total cost.

The results show that mostly farmers are young and are in favour of adopting modern techniques factor. The findings are in support with Sani *et al*., (2007) which stated that majority of farmers were within the age group of between 36 years to above 46 years are still in this active age and more adoptive to new techniques. Another socio-economic factor i.e. educational qualification states that most of the present day farmers are educated and level of education contributes significantly to decision making capacity of a farmer. These findings support Obinne, (1991); Alabi and Aruna (2006) and Ndlahitsa (2008) that the level of education determines the quality of skills of farmers, their abilities. For most of the farmers, poultry farming is a part time job which means they solely do not depend on the business and agriculture for their livelihood. These findings are in support of findings of Amaze (2000).

More than 50% of the respondents were earning from Rs. 1000 to Rs.50,000/- that means poultry farming is proving a beneficial enterprise for them.60% of the poultry owners are having a small family having two to four members. These findings favour the results of Igodan et.al (1988) which stated that more educated farmers tends to have smaller families and Arther (2006)observed that small family size enjoy better economic and social lives which have greater influence on better understanding of environmental conditions. Coming to the next socio-economic factor i.e. experience of the respondents in poultry showed that 48% of them have experience of 10- 15 years and the findings support Oluwatayo *et al*. (2008) that farmers with experience would be more efficient, better knowledge of climatic conditions and market situation and then expected to run a more efficient and profitable business.

Fixed and variable cost assessment for a flock size of 18000 birds is shown in Table 2.The results reveals that the total fixed cost which includes rental value of land (Rs.3500), depreciation on building (Rs.8233.33) and equipments (Rs.4626.13), interest on fixed capital (Rs. 81426.4) is 97785.87 which is 3.51% of the total cost. The cost of building ranks first among all fixed cost items with a percentage of 23.39 of total cost. Here the fixed cost per bird is Rs.5.43.

Table 1. Socio-economic profile of the selected farmers in the district

Socio-economic status	Characteristics	Frequency	Percentage
Age	Below 35 years	8	32
	35- 45 years	12	48
	Above 46 years	5	20
Educational qualification	Secondary	5	20
	Higher secondary	8	32
	Graduate	11	44
	Post graduate	1	4
Occupation	Businessmen	9	36
	Agriculture	8	32
	Government	4	16
	Private	4	16
Monthly income	1000- 50,000	13	52
	50,001-,100000	7	28
	100001-1,50,000	4	16
	1.5- 2,00000	1	4
Family size	2- 4	15	60
	5- 7	6	24
	8- 10	4	16
Experience	Less than 5 yrs	6	24
	5- 10	7	28
	10- 15	12	48
Total		25	100

Source: Estimation based on field survey

Table 2. Fixed and variable costs assessment in poultry farming (per batch)

Sr. No.	Items of fixed investment	Value in Rs. cost	% to total
1	Building	650000	23.39
2	Equipments	86750	3.12
3	Rental value of land	3500	0.12
4	Total initial fixed investment	740240	26.61
5	Depreciation on building @5%	8233.33	0.29
6	Depreciation on equipments @20%	4626.13	0.16
7	Total depreciation on fixed items+ rental value of land	16359.47	0.58
8	Interest on fixed capital @11%	81426.4	2.93
A.	**Total fixed cost (7+8)**	97785.87	3.51
Variable cost items			
9	Feed	1207000	43.43
10	DOC's (day old chicks)	630000	22.67
11	Medicines and vaccines	65644	2.36
12	Disinfectants	9534	0.34
13	Litter material	15880	0.57
14	Supplements	15406	0.55
15	Labour charges	75201	2.70
16	Fuel	3156	0.11
17	Water charges	11200	0.40
18	Electricity charges	5232	0.18
19	Repair and maintenance	7000	0.25
20	Miscellaneous	1300	0.04
21	Variable cost	2046553	73.64
22	Risk & mgt @10%	409310.6	14.72
23	Interest on working capital @11%	225120.8	8.10
B.	**Total variable cost (21+22+23)**	2680984	96.48
	Total cost per batch (A+B)	2778770	100

Note : Flock size - 18000 birds

Among the variable cost items the highest cost incurred is on poultry feed which stands at the top with a percentage of 43.43 of the total cost. The value of feed per bird is 67.05 Rs. After feed cost, value of DOC's (day old chicks) ranks second among variable cost items while labour charges and medicines and vaccination charges ranks 3rd and 4th.The variable cost item, Labour charges is 2.70% of the total cost. The variable cost per bird is 148.9 Rs. While total cost per bird is 154.37 Rs.

Table 3. Returns from poultry farming (per batch)

Particulars	Value
No. of birds marketed	17750
Average body weight of a bird (kg)	2.32
Output per batch (kg)	41180
Total price of birds	4035640
Manure per batch (Rs.)	17995
Gunny bags (Rs.)	7580
Gross returns	4061215
Returns over variable cost	1380231
Net returns	1282445
B-C Ratio	1.46

The average age of the birds at the time of marketing was 42 days with an average feed consumption of 3.5 kg and attained an average body weight of 2.32 kg per bird resulting in an average feed conversion ratio of 1.50 per bird.

The returns from an average broiler batch of 18000 birds is shown in Table 3. According to the results of this table the number of birds marketed are 17750 showing a loss of 250 birds which may be occurred during transportation of DOC's or by any disease, etc. The average body weight of a bird is taken as 2.32 kg. The sale price of bird varies largely so here by taking 98 Rs. Per kg of bird the value of total birds sold is Rs. 4035640. So the average value of gross returns is 4061215 Rs. which also includes price of manure and gunny bags sold after each batch. The value of net returns (by deducting total cost from gross returns) here is 1282445 Rs. Finally the B-C Ratio for an average batch size of 18000 birds in the study area is 1.46.

Conclusion

The average flock size reared by 25 farmers was found to be 18000 birds with 4 to 5 average number of batches per year. The total value of variable costs was found to be Rs. 20.46 lakh per batch. Out of which the feed cost accounted to Rs. 12.07 lakh per batch which is

highest among all variable cost items. The overall analysis gave a B-C Ratio of 1.46 hence it may be concluded that there is an immense scope for expansion of broiler production in Haryana. The most common problems faced by the farmers inproduction and marketing of broilers are high cost of feed, high mortality rate, high cost of chicks, high labour costs, availability of labour, lack of broiler marketing, high market fluctuations, lack of controlled organizations and lack of proper markets.

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