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Economic analysis of broiler production in Buldhana district

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Abstract

The present study on "Economic analysis of broiler production in Buldhana District" was undertaken to study the economics of production of broiler. It will show how best to use the various resources required in broiler production. Research would be helpful in making sensible use of contemporary inputs to maintain production consistency. Buldhana district was selected purposively three tahsils were selected on the basis of availability of maximum number of broiler units. i.e., Sindkhedraja, Deulgaonraja and Mehkar. Out of which, twenty well-kept broiler units with varying capacities were specifically chosen for meat production. The selected units then categorized into small (1000-2000), medium (2001-4000) and large (above 4000) units according to broiler unit size. Average total cost of production per batch of broiler in small, medium and large poultry unit was Rs. 245607.52 Rs 445195.77 and Rs 751709.82, respectively. Cost of broiler production per kg was higher in small units. (Rs 74.15) and lower in large units (Rs. 72.27). It can be concluded that cost of production is decreasing as increase in the size of poultry unit and the scale to economy is operating. Benefit- cost ratio was higher in large unit (1.37) followed by medium unit (1.34) and low in small unit (1.28).

Keywords: Poultry, broiler, cost, returns, production, units

1. Introduction

One of the agricultural industry's fastest-growing sectors in India right now is poultry. The production of eggs and broilers has increased at a pace of 8 to 10 percent annually, while the output of crops has been increasing at a rate of 1.5 to 2 percent annually. India is currently the third-largest producer of eggs worldwide as a result (Egg). A increasing urban population, dropping real poultry prices, and rising per capita income are the main causes of this sector's potential. The fastest-growing segment of the worldwide meat market is poultry meat, and the poultry industry is expanding quickly in India, the second-largest developing nation in the world. Rising earnings and a fast growing middle class, along with the rise of vertically integrated poultry farmers who have lowered production and marketing costs to lower consumer prices, are driving the growth of the poultry business in India. Future expansion in India's poultry sector will depend on integrated production, the shift in the market from live birds to chilled and frozen goods, and regulations that guarantee supplies of corn and soybeans at reasonable prices. The nation is home to a number of tiny facilities that make chicken dressing.

Dressed chickens are being produced by these plants. Five contemporary integrated poultry processing facilities are also in operation, manufacturing various chicken products such as dressed chicken and chicken cut pieces. These facilities will produce frozen egg yolks and egg powder for export. (Anonymous., 2023).

2. Methodology

The present study was undertaken in Buldhana district of Vidarbha region. The district was selected purposively. Primary data was collected from the Sindkhedraja, Deulgaonraja, and Mehkar tahsils of Buldhana district. Tahsils were selected on the basis of availability of maximum broiler unit. The data pertained for the year 2022-2023. Higher units was selected from Dusarbeed village followed by Sindkhedraja, Mali, Godankhed and Mehkar. Lowest unit was selected from Shendurjan. Out of which, twenty well-kept broiler units with varying capacities were specifically chosen for meat production. The selected units then categorized in to small (1000-2000), medium (2001-4000) and large (above 4000) units according to broiler unit size. The required information on fixed costs, variable costs,

and the cost of chicks, feed, medicine, labor, electricity, etc. will be gathered from the chosen broiler poultry farmers through personal interviews. The survey method will be employed, along with a pretested questionnaire schedule that has been specially designed.

3. Results and Discussions

Any business project's initial proposal phase must include a cost-benefit analysis. Because this study provides the

primary rationale for pursuing the suggested course of action, broiler production economics have been computed to determine viability. The findings and pertinent conversations are summed up here.

3.1 Cost of broiler production

3.1.1 Cost of poultry bird purchase

The purchase cost of poultry bird was estimated and presented in Table 1.

Table 1: Cost of poultry birds purchase of sampled poultry farmers, (Value Rs/unit)

Sr. No	Particular	Size group		
		Small (N=6)	Medium (N=7)	Large (n=7)
1	No. of chicks purchased	1602.67	2941.67	4988.57
2	Avg. chick price In Rs. Per bird	39.33	37.86	36.43
3	Mortality in no. of birds	74.50	142.50	242.14
	Mortality per cent	4.65	4.84	4.85

It could be seen from Table 1 that number of chicks purchased were 1602.67, 2941.67 and 4988.57 for small, medium and large units, respectively throughout year. Average chick price were Rs. 39.33, Rs.37.86 and Rs 36.43 for small, medium and large units, respectively. Mortality percentage were 4.65, 4.84 and 4.85 per cent for small,

medium and large units, respectively.

3.1.2 Total cost and cost of production for broiler of sampled poultry farmers

The cost of production of broiler for sampled poultry farmers were presented in Table 2

Table 2: Total cost and cost of production of broiler per unit size, (Value in Rs/unit)

Sr. No	Particular	Size group		
		Small (N=6)	Medium (N=7)	Large (N=7)
A	Fixed cost			
I	Land	41435.57	119468.98	138734.25
II	Building			
1	Broiler house	258025.17	522857.14	722428.57
2	Office cum storage	43261.17	54142.86	61857.14
3	Fencing	17216.67	32714.29	47202.29
4	Electricity fitting	3976.33	3714.29	3928.57
	Sub total A	363914.90	732897.55	974150.82
III	Equipment			
1	Brooder	4093.83	8857.14	17785.71
2	Feeder	3892.67	3965.14	4009.86
3	Waterer	3880.67	3928.57	4028.57
4	Sprayer	2760.67	3936.57	4457.14
5	Fan	335.33	345.71	381.43
6	Motor pump	6326.50	7063.71	8028.57
7	Others	1892.67	2209.29	3666.29
	Sub total B	23182.33	30306.14	42357.57
	Total	387097.24	763203.70	1016508.39
B	Variable Cost			
1	Cost of chicks	63153.33	114185.71	181557.14
2	Cost of feed	133804.50	243889.29	445296.29
3	Cost of litter	1719.33	3085.71	3171.43
4	Medical charges	2983.33	5120.71	6257.14
5	Wages of labour	7216.67	13042.86	16335.71
6	Electricity and water	1640.83	2142.86	4271.43
7	Transportation chages	710.67	1314.29	1985.71
8	Other charges	930.83	1235.71	1878.57
9	Total working capital	212159.50	384017.14	660753.42
10	Interest on total variable cost @ 6%	12729.57	23041.03	39645.21
	Total variable cost (B)	224889.07	407058.17	700398.63
	Total Fixed cost (A)			
1	Land Rent	1925.15	2450.23	2935.53
2	Interest on fixed cost @10%	4102.80	7915.94	10605.13
3	Depreciation on total fixed cost	14690.51	27771.43	37770.53
	Total fixed cost (A)	20718.45	38137.60	51311.19
	Total cost = TFC+TVC	245607.52	445195.77	751709.82

The total cost is composed of two different types of costs: variable and fixed. Table 2 presented the cost of production status for the poultry units chosen for this study.

The total fixed cost were Rs 20718.45, Rs 38137.60 and Rs. 51311.19 for small, medium and large units, respectively. Interest on fixed capital @ 10 per cent were Rs. 4102.80. Rs. 7915.94 and Rs. 10605.13 for small, medium and large units, respectively. Depreciation on fixed capital were estimated to Rs. 14690.51, Rs. 27771.43 and Rs. 37770.53 for small, medium and large units, respectively.

The cost of chicks and cost of feed were Rs. 63153.33, Rs. 114185.71, Rs. 181557.14 and Rs 133804.50, Rs. 243889.29 and Rs 445296.29 for small, medium and large units, respectively. Total working capital were estimated to be Rs. 212159.50, Rs. 384017.14 and Rs. 660753.42 for

small, medium and large units, respectively.

Total variable cost to be found Rs. 224889.07. Rs. 407058.17 and Rs. 700398.63 for small, medium, large units, respectively. Interest on variable cost @ 6 per cent and it was estimated to be Rs. 12729.57, Rs. 23041.03 and Rs 39645.21 for small, medium, large units, respectively. Cost of chick and cost of feed was the main component of variable cost. The estimated total cost was found to be Rs 245607.52, Rs. 445195.77 and Rs 751709.82 for small, medium, large units, respectively.

3.2 Returns from broiler production

3.2.1 Total gross income from different sized broiler unit

The details of average gross income from different sources of the broiler units are presented in Table 3

Table 3: Total gross income from different sized broiler unit of selected poultry farmer

Sr. No	Source of income	Size group		
		Small (N=6)	Medium (N=7)	Large (N=7)
1	Sale of Broiler			
	Quantity (Kg)	3150.58	5972.36	9932.51
	Value (Rs)	297395.40	580961.71	981592.10
2	Manure			
	Quantity (Kg)	1871.83	3518.57	6121.14
	Value (Rs)	1497.02	2888.43	5449.91
3	Empty gunny Bags			
	Quantity (Kg)	78.17	182.57	274.29
	Value (Rs)	938.04	2190.85	3291.42
	Total Gross Income (Rs)	299830.46	586040.99	990033.43

It could be seen from Table 3 that the value in rupee of broiler per lot were Rs 297395.40, Rs. 580961.71 and 981592.10 in case of small, medium and large size broiler units, respectively. The next important sources of income were sale of manure and empty gunny bags, which was Rs. 1497.02, Rs. 2888.43, Rs. 5449.91 and Rs. 938.04, Rs. 2190.85, Rs. 3291.42 for small, medium and large size

broiler unit, respectively. In at overall, Total gross income were Rs. 299830.46, Rs. 586040.99, and Rs. 990033.43 for small, medium and large unit, respectively.

3.2.2 Total produce and total gross income per broiler

The gross income per broiler was worked out and presented in Table 4

Table 4: Total produce and total gross income per broiler from different sampled broiler unit

Sr. No	Source of Income	Size group		
		Small (N=6)	Medium (N=7)	Large (N=7)
1.	Sale of Broiler			
	Weight Broiler in kg	2.07	2.08	2.08
	Value (Rs)	195.20	201.58	205.56
2.	Manure			
	Qty (Kg)	1.18	1.20	1.16
	Value (Rs)	0.80	0.81	0.84
3.	Empty gunny Bags			
	Qty (Kg)	0.05	0.05	0.05
	Value (Rs)	0.71	0.71	0.71
	Total Gross Income (Rs)	196.71	203.11	207.11

It could be seen from Table 4 that per broiler sale were Rs. 195.20, Rs. 201.58 and Rs. 205.56 for small, medium and large unit, respectively. Cost of manure and empty gunny bags were Rs. 0.80, Rs. 0.81, Rs. 0.84 and 0.71 for small, medium and large unit, respectively. The value of gross income per broiler were Rs. 196.71, Rs. 203.11 and Rs

207.11 for small, medium and large unit, respectively.

3.3 Cost of production and net profit per broiler

The cost of production and net benefit was presented in Table 5

Table 5: Cost of production and net profit per broiler of different sampled broiler units, (Value in Rs)

Sr. No	Particulars	Size group		
		Small(N=6)	Medium (N=7)	Large (N=7)
1	Average weight per bird in kg	2.07	2.08	2.08
2	Variable cost	140.32	138.38	140.40
3	Total cost	153.25	151.34	150.69
4	Income			
	Main Produce	195.20	201.58	205.56
	By produce			
	Manure	0.80	0.81	0.84
	Gunny bags	0.71	0.71	0.71
	Gross Income	196.71	203.11	207.11
5	Net profit			
	At variable cost	56.39	64.73	66.71
	At total cost	43.46	51.77	56.42
6	Input-output ratio			
	Over variable cost	1.40	1.47	1.48
	Over total cost	1.28	1.34	1.37

It could be seen from Table 5 that variable cost per broiler were accounted Rs 140.32, Rs. 138.38 and Rs. 140.40 for small, medium and large unit, respectively. And value of total cost per broiler were found Rs. 153.25, Rs 151.34 and Rs. 150.69 for small, medium and large unit, respectively. The value of gross income per broiler was Rs. 196.71, Rs. 203.11 and Rs. 207.11 for small, medium and large unit, respectively. Net profit per broiler at variable cost and total cost was Rs 56.39, Rs. 64.73, Rs. 66.71 and Rs. 43.46, Rs 51.77, Rs 56.42 for small, medium and large units, respectively. Input-output ratio at over variable cost and at over total cost was found to be 1.40, 1.47 and 1.48 and 1.28, 1.34 and 1.37 for small, medium and large units, respectively.

4. Conclusion

Average total cost i.e., cost of production, per batch of broiler in case of small size unit has Rs. 245607.52 which was less as compared to medium Rs 445195.77 and large size units Rs 751709.82. Input- output ratio was higher in large unit (1.37) followed by medium unit (1.34) and low in small unit (1.28). The input output ratio is an indicator of economic efficiency, the input output ratio is greater than one it indicate that broiler production is a profitable venture.

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