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## RD Kumbhar

Department of Agriculture  
Economics, RSCM College of  
Agriculture Kolhapur, MPKV,  
Rahuri, Maharashtra, India

## HR Shinde

Department of Agriculture  
Economics, RSCM College of  
Agriculture Kolhapur, MPKV,  
Rahuri, Maharashtra, India

## SS Jadhav

Department of Animal  
Husbandry and Dairy Science,  
RSCM College of Agriculture  
Kolhapur, MPKV, Rahuri,  
Maharashtra, India

## MS Jadhav

Department of Agriculture  
Economics, RSCM College of  
Agriculture Kolhapur, MPKV,  
Rahuri, Maharashtra, India

## Corresponding Author:

### RD Kumbhar

Department of Agriculture  
Economics, RSCM College of  
Agriculture Kolhapur, MPKV,  
Rahuri, Maharashtra, India

## Economics of broiler units in Pune district of Maharashtra

RD Kumbhar, HR Shinde, SS Jadhav and MS Jadhav

### Abstract

The present study entitled, "Economics of Broiler Units in Pune District of Maharashtra". With views to study the cost and returns structures of broiler units before and during pandemic (COVID-19). For the present study thirty contract broilers units from Pune district were selected and grouped into small (below 3500 birds), medium (3501-5000 birds) and large (Above 5001). The study was based on the primary data of broiler production before and during pandemic was worked out by using standard cost concept. The study indicated that total fixed cost was Rs. 1,39,312.88, Rs. 262786.92 and Rs. 341826.4 for small, medium and large units. And value of total gross income before pandemic was obtained Rs 51365.54, Rs. 94983.41, Rs. 148387.98 and in pandemic it was Rs. 58368.6, Rs. 100501.6, Rs. 162798 in case of small, medium and large size units, respectively. Before pandemic benefit -cost ratio was 1:27, 1:36, 1:4 and it slightly increased in pandemic i.e. 1:3, 1.38, 1.5 in case of small, medium and large size broiler units, respectively.

**Keywords:** Pandemic, cost and returns, small, medium, large, broiler units

### Introduction

Poultry is no longer has a place in backyard business since the poultry industry has gained prominence. It becomes crucial elements of Indian agricultural economy. Broiler industry is one of the profitable agricultural sectors that can successfully address the issues of rural unemployment, particularly for small and marginal farmers. In the livestock industry poultry industry makes around Rs 1.25 lakh crore rupees, accounting for about 1 percent of the national GDP and about 14 percent of the livestock GDP and also contributed 65 percent meat products. The Poultry Industry employs more than 4 million people either directly or indirectly and contributes over Rs. 70,000/- crores to the national GDP. As a by-product, about 2-2.5 million tons of, important organic fertilizer known as poultry litter, is created annually. The poultry industry is situated in certain pockets of the country. According to Agriculture and Processed Foods Products Export Development Authority (APEDA), the nation has exported 2,55,686.92 MT of chicken products in the world in the year 2020-21 for a total of Rs. 435.53 crores/58.70 USD Millions. Middle East is the primary destination of the exports. Each year, India exports around 5000 MT of poultry products into Europe, the largest chunk of which is destined for Germany.

China notified the WHO in December 2019 about the rising number of instances of a respiratory illness resembling the flu in Wuhan, which was later determined to be brought on by a coronavirus (SARS-Cov2) and given the name COVID-19. Due of the virus high level of contagiousness and global propagation, WHO labelled it a pandemic in March 2020. India is a country that is agrarian about 70 percent of the Indian population depend on agriculture. On 22 march the Indian government issued a nationwide lockdown order to combat the virus. This approach can protect human life, but also has an impact on the nation's agricultural sectors. The fear of covid 19 and spread of false information on social media linking chicken to the fatal virus have had a significant negative impact on the unaware poultry business and farmers. Fearing the virus that originated in China and quickly spread to the rest of world, many individuals across the nation removed eggs and chicken from the menu in majority of houses. Prices for chicken have dropped significantly from 240 kg to 50kg. To eradicate myths about the lethal virus, the poultry industry has planned nationwide advertising campaigns using chicken and eggs to dispel concerns about the deadly illness. However, when WHO established that Chicken was not the cause of Covid-19 and also stated that chicken and eggs are good source of protein to recover from covid -19. On the other hand demand for chicken and eggs was rising.

**Objective**

Different size broiler	Units	Before	And
During pandemic. Methodology Selection of Sample			

To analyse the costs & returns structures of Pune district was purposely selected because in Maharashtra highest number of broiler units are present in Pune district belt. Indapur and Baramati tehsils of Pune district was selected on basis of highest number of broiler units. Random sampling design was adopted while selection of broiler units from Pune district. From each tehsil 5 broiler units were selected on basis of different size classes of broiler farms. The cross-sectional data was collected from 30 broiler units with help of pre tested schedule for before pandemic (2018-19) and during pandemic (2020-21)

Sr. No	Category	Indapur Tehsil	Baramati tehsil	Total
1	Small (Below 3500)	5	5	10
2	Medium (3501-5000)	5	5	10
2	Medium (3501-5000)	5	5	10
	Total	15	15	30

**Analysis of data**

Analysis was carried, to work out the cost, returns concepts and with help of B:C ratio.

**Fixed Cost**

Fixed costs are these which do not change in magnitude as the amount of output of the production changes. These costs include depreciation on buildings and equipments, interest on capital investment, insurance charges and taxes are also included in this category

**Variable cost**

In contracting broiler farming Feed and Chicks provided by company so required variable cost is less as compared to non-contract broiler units. It involve only miscellaneous charges.

**Total cost**

Total cost: Total cost is the sum of total variable costs and total fixed cost

$$(T.C. = T.V.C. + T.F.C.)$$

Gross returns are calculated by total sale of broiler at the respective prices during per lot size.

**Results and Discussion**

Economic analysis is essential to determine a business profitability and viability. As result, the economics of broiler units before and during pandemic have been calculated in order to assess the feasibility. The results obtained from the present investigation as well as relevant discussions have been summarized below.

**Table 1:** Total Cost and Cost of Production of Broiler Per unit size in different size Broiler Units

Sr. No	Particulars	Small (N=10)	Medium (N=10)	Large (N=10)
<b>A Fixed Cost</b>				
1	Land	70300	122800	160385
<b>2 Buildings</b>				
	Brooder house	95675	17425	28812.5
	Broiler house	34950	80066.66	10023038
	Office cum store	103625	18400	23200
	Electricity fitting	368531	7416.66	1107L42
	Subtotal	12886531	246108.32	3236993
<b>3. Equipments</b>				
	<b>Feeder</b>	25195	29953	4017.5
	Waterer	2599.1	32323	39215
	Fan	400	1200	1500
	Motor pump	492857	9250	8685.7
	Total	13931228	26278632	341826.4

Table 1. revealed that overall situation of fixed cost in the selected broiler units for the present study. The total fixed cost was Rs. 1, 39, 312.88 Rs. 262786.92 and Rs. 341826.4 for small, medium and large units, respectively. Total fixed costs were same before and during covid-19. Interest on fixed

capital @ 10 percent was Rs. 1,39,31,288, Rs. 26278.692 and Rs. 34182.64. Depreciation on fixed capital was estimated to Rs. 6840, Rs. 12050, Rs. 15758.5 for small, medium and large units, respectively.

**Table 2:** Variable Cost of Birds Per Lot in Different Size Broiler Unit Rs

Sr. No	Variable cost per lot	Small (N=10)		Medium (N=10)		Large (N=10)	
		Before pandemic	During pandemic	Before pandemic	During pandemic	Before pandemic	During pandemic
1.	Cost of Litter	1500	2500	2556.7	3406.7	4000	5066.8
2.	Cost of Medical Expenses	2900.4	3099.4	7566.7	8486.7	8056.6	9456.6
3.	Wages of Labour	8825	9564.25	13400	15200	16850	18099
4.	Electricity Charges	1919.5	2301	2656.5	3029	19690	23270
5.	Other Charges	800	800	1100	1100	1450	1450
6.	Total Working Capital	15944.9	18264.65	27279.9	31222.4	50046.6	57342.4

7.	Interest On Total Variable Cost@ 6%	956.69	1095.87	1636.79	1873.34	3002.79	3440.54
8.	Total Variable Cost(A)	16901.59	19360.52	28278.69	33095.74	53049.50	60782.944
9.	<b>Fixed Cost</b>						
10.	Land Rent	1900	1900	2300	2300	2800	2800
11.	Interest On Fixed Capital 10%	13931.28	13931.28	26278.69	26278.69	34182.64	34182.64
12.	Depreciation	6840	6840	12050	12050	15758.5	15758.5
13.	Total Fixed Cost B	22671.28	22671.28	40628.69	40628.69	52741.14	52741.14
14.	Total cost	39572.9	42031.8	69545.5	73724.4	105790.5	113524.1

It was observed that cost of chicks and cost of feed does not exist in variable cost in above Table as these items were supplied by the buy- back contracting company. In contract broiler rearing owner do not have pay any charges for one day old chicks, feed. Before pandemic total variable cost was Rs.

16901.59, Rs. 28278.692, Rs. 53049 in small, medium and large size units respectively. And during pandemic total variable cost became Rs. 19360.53, Rs. 33095.74, Rs. 60782.944 in small, medium and large size units respectively.

**Table 3:** Cost of Production and Benefit from Per Lot of Broiler Birds of Different Sample Broiler Units

Source of Income	Small unit		Medium unit		Large unit	
	Before pandemic	During pandemic	Before pandemic	During pandemic	Before pandemic	During pandemic
Total cost Income	39572.88	42031.82	69545.38	73724.45	105790.54	113524.08
Main produce	42865.54	44148.69	64753.41	62751.6	100278.48	105623.2
<b>By produce</b>						
Manure	7000	11400	25619	32950	40780	49974.82
Gunny bags	1500	2820	4611	4800	7329.5	7200
Gross Income	51365.54	58368.6	94983.41	100502	148387.98	162798
B:C Ratio	1.27	1.3	1.36	1.38	1.4	1.5

In Table 3. Total cost before pandemic from per lot was obtained Rs. 39572.88, Rs. 69545.38, Rs. 105790.54 and in pandemic it was Rs. 42031.82, Rs. 73724.45, Rs. 113524.08 in case of small, medium and large size broiler units, respectively. Before pandemic income from manure were Rs7000, Rs. 25619, Rs. 40780 and from gunny bags it was Rs. 1500, Rs. 4611, Rs. 7329.5 in small, medium and large size broiler units, respectively. While in pandemic poultry owner earned Rs. 11400, Rs. 32950, Rs. 49974.82 from manure and Rs. 2820, Rs. 4800, Rs. 7200 from gunny bags in small, medium and large size broiler units, respectively. And value of total gross income before pandemic was obtained Rs 51365.54, Rs. 94983.41, Rs. 148387.98 and in pandemic it was Rs. 58368.6, Rs. 100501.6, Rs. 162798 in case of small, medium and large size units, respectively. Before pandemic benefit -cost ratio was 1:27, 1:36, 1:4 and it slightly increased in pandemic i.e.1:3, 1.38, 1.5 in case of small, medium and large size broiler units, respectively.

### Conclusion

Total gross income was greater in pandemic than before pandemic, it was due to increased in price of manure and empty gunny bags in pandemic. B: C ratio show increasing trend with size of broiler units. Before pandemic benefit -cost ratio was 1:27, 1:36, 1:4 and it slightly increased in pandemic i.e.1:3, 1.38, 1.5 in case of small, medium and large size broiler units, respectively.

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