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## An economic analysis of production and marketing of chilli in Durg district of Chhattisgarh

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### Abstract

The present study entitled 'An Economic Analysis of Production and Marketing of Chilli in Durg district of Chhattisgarh' was conducted in the year 2016-17 with a sample of 120 respondents. The results indicated that the number of respondents who had Middle and high school education were more in Medium size farms followed by Small and large. And it was also observed that the higher educated farmers were more in Large size farms followed by medium and small size of farms. The average area per hectare holding in small size farms was 0.78 ha, medium size was 1.86 ha and in large size farms were 2.85ha. Total cost incurred by the small size farms, medium size farms and large size farms were (Rs.101951.2/ha), and (Rs.98417/ha) and (Rs.95453.2/ha) respectively. The Gross Returns obtained per hectare by small size farms, medium and large size farms were (Rs.312000/ha), and (Rs.286500/ha) and (Rs.274500/ha) respectively. And the Net returns per hectare was small size farms, medium and large size farms (210048.8/ha), and (Rs.188083/ha), and (Rs.179047/ha) respectively. Input-output ratio per hectare were small size farms, medium and large size farms, (1:3.06), and (1:2.91) and (1:2.88) respectively.

**Keywords:** production, marketing

### Introduction

In India, a wide variety of crops can be cultivated successfully. These include all of cereals, vegetables, fruits, flowers, spices, plantation crops, medicinal and aromatic crops. The Government of India had greatly emphasized on higher production of all these crops right after independence. Also, After the Green Revolution of the 1960's, it was realized that Indian topography and agro-climatic conditions are well suited for horticultural crops also and these crops can help in achieving sustainability of farmers with small holdings which constitutes a huge farmers population in India. However, it was only in the mid 1980's when Government of India realized the need for diversification to make agriculture more profitable by adopting efficient land use options, expansion in irrigation and development of institutes to create gainful employment for rural people. These efforts which are put forth by the Indian Government proved to be rewarding in terms of increased production and productivity of horticultural crops.

### Description of Chilli

Chilli (*Capsicum annum* L.) is a commercial crop which belongs to family solanaceae and is regarded as one of the most valuable crop of India. Named as wonder spice, it is the most widely used universal spice. There are wide varieties of cultivars for various uses like vegetables, pickles, spices and condiments. It suits to both tropical and sub-tropical climate conditions and can be grown up to 2000 meter altitudes. It requires a warm humid climate in Indian condition (Joshi and Singh, 1975). Though, chilli can be grown in many types of soils, but suits best to well drained loamy soils, rich in organic matter with soil pH range of 6-7. Chilli plant is a white flowered, dark green or purple leaved plant that grows up to 1.5 m height. Fruit varies greatly in size, shape, color and pungency. There are more than fifty chilli cultivars grown in India. Being a native of South America and it is widely distributed in all tropical and sub tropical countries including India. It was first introduced in India by Portuguese towards the end of 15th century. Now it is grown all over the world except in colder parts.

### Objectives of the Study

To examine the cost and returns in different size of farm growers

## Materials and Methods

Chilli cultivation is practiced throughout the district. However, the large scale cultivation of Chilli is concentrated mainly in Durg taluk extending on an area of 62468 hectares. Hence, Durg taluk was specifically selected for the study. The information on area under Chilli crop and number of Chilli growers from the selected villages was obtained from the respective village accountants (Talati). The data related to prices and arrivals of Chilli was collected from Agricultural Produce Market Committee of Durg market. A proportionate sample of ten per cent of the population from each village was

selected randomly. Thus, the total size of the sample selected for the study was 120. For analyzing the data collected during the study, A sample of 10 percent of all the market functionaries involved in the marketing process was randomly selected for the present study. All the marketing channels which are prevalent for the selected crop will be followed to evaluate the price spread and producer's share in consumer's rupee in different marketing channels

## Results and Discussion

**Table 1:** Resource use and Cost of Cultivation of chilli crop per hectare in different Size of Farms Group, Number of Respondents = 120 S M L= 51+ 39+ 30=120 (Value in Rupees)

Sl. No	Particulars of Farm Operations	size of the farm groups			sample average
		Small	medium	Large	
1	Hired Human Labour Charges	12600 (12.36)	13050 (13.26)	14400 (15.09)	13196.25 (13.31)
2	Bullock Labour Charges	3150 (3.09)	2700 (2.74)	2250 (2.36)	2778.75 (2.80)
3	Machinery Labour Charges	4800 (4.71)	5400 (5.49)	6000 (6.29)	5295 (5.34)
4	Cost of Seeds and Seedlings	4500 (4.41)	4200 (4.27)	3900 (4.09)	4252.5 (4.29)
5	Cost of Farm Yard Manure	1500 (1.47)	1300 (1.22)	1100 (1.15)	1335.00 (1.35)
6	Cost of chemical Fertilizers	16920 (16.60)	16360 (16.66)	15950 (16.71)	16495.50 (16.63)
7	Cost of Irrigation charges	1500 (1.47)	1350 (1.37)	1100 (1.15)	1351.25 (1.36)
8	Cost of Plant Protection charges	14080 (13.81)	13250 (13.46)	12758 (13.36)	13477.75 (13.59)
9	Miscellaneous charges	550 (0.54)	500 (0.51)	450 (0.47)	508.75 (0.51)
10	Interest on Working Capital @ 8%	4768 (4.68)	4648.80 (4.72)	4632 (4.85)	4695.26 (4.73)
11	Deprecation on Fixed Resources	3200 (3.14)	2950 (3.00)	2780 (2.91)	3013.75 (3.04)
12	Land Revenue Paid to Government	12 (0.01)	12 (0.01)	12 (0.01)	12 (0.01)
13	Interest on Fixed Capital @ 10%	1821.2 (1.79)	1796.2 (1.83)	1779.2 (1.86)	1802.58 (1.82)
14	Rental Value of Own Land	15000 (14.71)	15000 (15.24)	15000 (15.71)	15000 (15.12)
15	Imputed value of Family Labour charges	17550 (17.21)	15900 (16.16)	13350 (13.99)	15963.75 (16.10)
16	Total Cost of Cultivation	101951.20 (100)	98417 (100)	95453.20 (100)	99178.09 (100)

The Table 1 and figure 4.1 revealed that among different size of farms in total cost incurred by the small size farms were high (Rs.101951.20/ha) as compared to medium and large size farms (Rs. 98417/ha and Rs. 95453.20/ha) respectively. Sample average for total cost was Rs.99178.09/ha in different size of farms group.

The cost of human labour, fertilizers, seeds and bullock labour were the items of cost with major share in the variable costs, because most of the operations like harvesting, and weeding were human labour intensive operations and the other operations like land preparation were bullock labour intensive. The distribution pattern of operational cost under various inputs revealed that cost of human labour was the highest in the large size farms (Rs.14400/ha), compared to medium size farms (Rs.13050/ha) and lowest on small size farms (Rs.12600/ha). Whereas, bullock labour cost was the highest in case of small size farms (Rs. 3150/ha) as compared to medium (Rs. 2700/ha) and large farms (Rs. 2250/ha).

Machinery labour cost was Rs. 5295/ha in different size of farms group. The cost of seedlings was the highest on small size farms (Rs.4500/ha) and lowest in large size farms (Rs.3900/ha) respectively. As chilli would respond well with chemical fertilizer so the cost of farm yard manure used was ranged from Rs. 1500 (small size farms) to 1100 (large size farms). Whereas, the expenditure on fertilizers was the highest (Rs.16920/ha) for small size farms as compared to medium size farms (Rs. 16360/ha) and large size farms (Rs.15950/ha) respectively. It was also noticed that the highest expenditure on pesticide was seen on small size farms (Rs.14080/ha) as compared to medium and large size farms (Rs. 13250 and Rs. 12758) respectively. Sample average for

depreciation on fixed resources was Rs. 3013.75 interest on working capital Rs. 4695.26, interest on fixed capital was Rs.1802.58. Land revenue paid to government was Rs.12 in different size of farms group.

The cost of rental value of own land was Rs.15000/ha in different size of farms group. Sample average for rental value of own land was Rs 15000/ha.

**Table 2:** Cost Concepts in chilli crop per hectare in different Size of Farms Group Number of Respondents = 120 S M L= 51+ 39+ 30 =120 (Value in Rupees)

Sl. No	Cost Concepts	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Cost A <sub>1</sub>	67580	65730.8	65324	66411.76
2	Cost A <sub>2</sub>	67580	65730.8	65324	66411.76
3	Cost B	84401.2	82517	82103.2	83214.34
4	Cost C	101951.2	98417	95453.2	99178.09

Table 2 and Figure 4.3 reveals that Cost Concepts on different size of farms group per hectare. Cost A<sub>1</sub> in small, medium and large size of farms groups was Rs. 67580/ha, Rs. 65730.8/ha and Rs. 65324/ha respectively. Cost A<sub>2</sub> was also same as Cost A<sub>1</sub> in small, medium and large size of farms groups was Rs.67580/ha, Rs.65730/ha and Rs.65324/ha respectively. Cost B in small, medium and large farms group was Rs. 84401.2/ha, Rs. 82517/ha and Rs.82103.2/ha respectively. Cost C was highest in small size farms (Rs. 101951.2/ha) and lowest in large size farms (Rs.95453.2/ha). Sample average for Cost A<sub>1</sub>, Cost B and Cost C was Rs. 66411.76/ha, Rs. 83214.34/ha and Rs. 99178.09/ha in different size of farms group.

**Table 3:** Measures of Farm Profitability in chilli crop per hectare in different Size of Farms Group Number of Respondents = 120 S M L= 51+39+ 30 =120 (Value in Rupees)

Sl. No	Particulars	Size of Farms group			Sample Average
		Small	Medium	Large	
1	Gross Returns	312000	286500	274500	294337.50
2	Farm Business Income	244420	220779.2	209176	227925.74
3	Farm Investment Income	226870	204879.2	195826	211961.99
4	Net Returns	210048.8	188083	179047	195159.42
5	Family Labour Income	227598.8	203983	192397	211123.17
6	Input output ratio	1:3.06	1:2.91	1:2.88	1:2.97

Table 3 and figure 4.4 reveals that Measures of Profitability in chilli cultivation in different size of farms group. The gross returns obtained per hectare by small size farms were high (Rs.312000/ha) as compare to medium and large size farms (Rs. 286500/ha and Rs. 274500/ha) respectively. This makes the sample average for gross returns was 29337.50/ha in different size of farms group. Farm business income in small, medium and large size of farms group was Rs. 244420/ha, Rs.220779.2/ha and Rs.209176/ha respectively. Sample average for farm business income was Rs.227925.74/ha in different size of farms group. Farm investment income was highest in small size farms (Rs. 226870/ha) as compared to medium size farms (Rs. 204879.2/ha) and lowest in large size farms (Rs. 195826/ha) respectively. This makes the sample average for Farm investment income was Rs. 211961.99/ha in different size of farms group. The net returns per hectare obtained by small size farms were high (Rs. 210048.8/ha) as compared to medium and large size farms (Rs. 188083/ha and Rs. 179047/ha) respectively. The Sample average of net returns was Rs. 195159.42/ha in different size of farms group. Sample average of Family labour income was Rs. 211123.17/ha in different size of farms group. The input output ratio was highest in small size farms (1:3.06) as compare to medium size farms (1:2.91) and lowest in large size farms group (1:2.88). This makes the sample average for input output ratio was 1:2.97 in different size of farms.

### Conclusion

The study shows that the production and marketing of chilli in Durg district. The main objective of the study is to analyze, socio economic characteristic of sample respondents, economics of chilli production, price spread and constraints in production and marketing of chilli. The results revealing that the socio economic status of the respondents found to be moderate with primary education, well economic back ground and greater access to all the assets. Economics of Chilli production is more profitable in large farms as compared to medium size farms and small size farms.

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