

## Growth Rate of Chilli Production in Guntur District of Andhra Pradesh

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### ABSTRACT

The present study has analysed the growth rate of chilli production in Guntur district of Andhra Pradesh. In Guntur district, growth rates of area, production and productivity has increased due to the effective extension work. But, in Andhra Pradesh, decreasing trend is seen growth rate of area whereas production and productivity had been positive. The cost of manure and labour is high in the chilli production and the net return from the crop is reasonable. Manure is the major input that involves more cost. Similarly, hiring labour is also costly and difficult to find agricultural labours. The input-output ratio is reasonable wherein more concentration and research can increase the level of chilli production at high level. Thus, the government must come forward to concentrate more on chilli production through research and development, which has more scope for export earnings.

**Keywords:** cost, return, yield, labour, growth rate

### INTRODUCTION

Chilli is produced throughout India, making our country the most dominating player in the world market. The varieties of chilli produced by India are Sannam, LC 334, Byadgi, Wonder Hot and Jwala. It is cultivated in all the states and union territories of the country. The important states growing chilli are Andhra Pradesh, Karnataka, Orissa, West Bengal, Maharashtra, Gujarat and Tamil Nadu. India is the largest producer of chilli the world. Its production level hovers around 1.2 million tonnes annually. India also has the maximum area dedicated to the production of this crop. India produces 13,53,796 tonnes of chilli from an area of 8,01,070 hectares in 2008-09. This accounts for about 27.24 per cent of the total area under spice cultivation and 25.65 per cent of total spice production in India.

Andhra Pradesh stands first in the list of major chilli producing states in India and also has the maximum acreage under chilli cultivation in the country. It alone commands 57.80 per cent of the chilli production in India, with a production of around 7.7 lakh tonnes of chilli, followed by Karnataka (12.40 %), Orissa (4.82 %), West Bengal (4.80 %), Maharashtra (3.55 %), Gujarat (3.53 %) and Tamil Nadu (3.22 %). The major chilli producing states in India, namely, Andhra Pradesh, Karnataka, Orissa, West Bengal, Maharashtra, Gujarat and Tamil Nadu contribute around 83 per cent of the total area under chilli crop cultivation in the country and 90 per cent of the total Indian produce.

The market for chilli affected by seasonal price fluctuations, overall production in the country, world demand, and stocks available in storages and hedging among the various varieties of chilli. The major trading centers of chilli and chilli powder in India are Guntur (Andhra Pradesh), Warangal (Andhra Pradesh), Khammam (Andhra Pradesh), Hindpur (Andhra Pradesh), Raichur (Karnataka), Bellary (Karnataka), Unjha (Gujarat), Chennai, Kolkata, Mumbai, Delhi, Ahmedabad and Nagpur. Guntur is the largest chilli market in the world.

The following countries are the major consumers of chilli with India again leading the list: India, China, Mexico, Thailand, the USA, the UK, Germany and Sweden. The major importers of Indian chilli are USA, Sri Lanka, Bangladesh, Nepal, Mexico, Canada, the UK, Saudi Arabia, Singapore,

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Malaysia and Germany. Though Indian exports are showing satisfactory trends, nowadays India is facing a very tough competition in the international export market as price of the Indian chilli powder is considered too high and other competing countries are providing chilli at very competitive rates to the major importing countries. The exports can be further improved, provided India is able to meet the strict quality demands of the international market. Steps have to be taken by the government to encourage exporters in order to maintain India's dominance in the world market.

## **METHODOLOGY**

Chilly crop is grown almost in all the districts of Andhra Pradesh. Among the 23 districts of Andhra Pradesh, Guntur and Khammam districts are two major chilly producers. The area, production and productivity of chilli Guntur district during the period 2011-12, average area under chilli cultivation in Guntur district was 76,124 hectares and in Khammam district was 32,778 hectares. Statistical records showed that, Guntur districts occupied about 31 per cent of the total area under Chilli Andhra Pradesh and only 69 per cent of the total area was occupied by the remaining districts. The average productivity in Guntur district was 4439 Kg/ha, and it was higher than the average productivity of the state, i.e.3430 Kg/ha. The average productivity in Khammam district was 3453 Kg/ha. The average production of chilli Guntur district was 2, 75,182.9 tonnes and it were 11,318.6 tonnes in Khammam. Considering area, production and productivity indicators, Guntur district was purposely selected for the study.

## **CHILLI GUNTUR DISTRICT**

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**Table1.** Area, Production and Productivity of Chilli in Guntur District of Andhra Pradesh

S.No	Year	Area (ha)	Production (tonnes)	Productivity (Kg/ha)
1.	2002-03	59,316	1,19,700	2,018
2.	2003-04	67,274	3,38,792	5,034
3.	2004-05	55,805	2,73,426	4,899
4.	2005-06	41,453	1,94,251	4,686
5.	2006-07	59,916	2,88,940	4,822
6.	2007-08	64,000	3,15,000	4,921
7.	2008-09	63,628	3,14,379	4,940
8.	2009-10	66,938	3,61,407	5,399
9.	2010-11	64,708	2,19,101	3,385
10.	2011-12	76,124	3,26,833	4,293
	<b>Average</b>	<b>61,918.2</b>	<b>275182.9</b>	<b>4439.7</b>

**Source:** Season and crop reports (2002-03 to 2011-12)

## **GROWTH RATE OF CHILLI**

Knowledge of the growth trend in area, production and productivity of a crop is an important ingredient of perspective planning and policy decisions. Keeping this point in view, the rates of growth of area, production and productivity of Chilli Guntur District and in Andhra Pradesh have been estimated in this study the results are presented in table 2.

To study the growth rate in Area, Production and Productivity price of Chilli in Guntur District, the compound growth rate was computed using the exponential growth model.

$$Y = a b^t$$

$$\log y = \log a + t \log b$$

$$Y = A + B t$$

Where,

$$Y = \log y$$

$$A = \log a$$

$$B = \log b$$

Y = Area (ha)/ production (tonnes) and productivity (kg/ha)

t = Time elements which takes the value 1,2...n for various years

A = Intercept

B = Regression co-efficient

Compound Growth Rate 'r' = (Antilog of B-1) × 100.

$$t = r/SE(r)$$

Where,

r = Compound growth rate

SE= Standard Error.

**Table2.** Growth Rates of Chilli in Guntur District and Andhra Pradesh

S. No.	Particulars	Period (2002-03 to 2011-12)
1	<b>Guntur</b>	
	a. Area	5.55
	b. Production	2.59
	c. Productivity	2.87
2	<b>Andhra Pradesh</b>	
	a. Area	-0.48
	b. Production	0.41
	c. Productivity	1.20

In Guntur district, it could be seen from the above table that Guntur District experienced positive growth rates in area, production and productivity of chilli. The respective growth rates being 2.59 per cent, 5.55 per cent and 2.87 per cent. This indicated that due to the awareness of the profitability of the crop, the increases in the growth rates of area, production and productivity, which might have been due to the effective extension work undertaken to bring in more area under this crop and also due to the adoption of package of recommended practices by the farmers. In Andhra Pradesh, decreasing trend is seen growth rate of area, but the growth rates of production and productivity had been positive.

## **COSTS AND RETURNS IN CHILLI PRODUCTION**

Since one of the objectives of the study was to find the economics of chilli cultivation, analysis was undertaken to estimate the costs and returns of chilli cultivation. The per acre cost of cultivation along with the details of yield, gross returns per acre, net returns per acre, output input ratio and cost of production per kilogram of chilli were estimated for the sample farms. The results are presented in Table 3. It could be observed from the table that the cost of production of chilli was Rs. 74,600.33 per acre. Human labour constituted the highest share in the cost of production accounting for 28.55 percent of the total cost (23.30 percent of hired labour and 5.26 percent of family labour). The high level of family labour participation rate might be due to the poor economic status of these farm families, it should also be noted that cost of manures constituted 27.43 percent of the cost of production. The average yield of chilli the sample farms was 2093 kg per acre. The average gross returns and net returns were Rs. 94185.00 per acre and Rs. 19584.67 per acre respectively. The output-input ratio was 1.26 with per unit cost of production of Rs. 45 as against the market price of Rs. 75 per kilogram of chilli. These would indicate high profitability of raising this crop.

**Table3.** *Cost and Returns of Chilli the Sample Farms (in rupees per acre)*

S.No.	Particulars	Value	Percentage to total
1	Cost of hired human labour, measured in man days of eight hours	17383.32	23.30
2	Cost of Bullock labour, measured in pair days of eight hours	4672.67	6.00
3	Seeds	5000.00	6.70
4	Manures	20467.86	27.43
5	Land revenue	150.00	0.20
6	Depreciation on farm implements and machinery	558.56	0.74
7	Interest on working capital at the rate of 12 percent for six months	4019.36	5.38
8	Cost A <sub>1</sub>	52251.77	70.04
9	Rental value of own land	12000.00	16.08
10	Interest on fixed capital	6425.17	8.61
11	Cost B	70676.94	94.74
12	Imputed value of family labour, measured in man days of 8 hours	3923.39	5.25
13	Cost c	74600.33	100.00
14	Yield, in kilograms per acre	2093.00	
15	Gross return	94185.00	
16	Net return	19584.67	
17	Output – Input ratio	1.26	
18	Cost of production per kilogram	45	
19	Price of chilli per kilogram	75	

## CONCLUSION

In Guntur district, growth rates of area, production and productivity has increased due to the effective extension work. But, in Andhra Pradesh, decreasing trend is seen growth rate of area whereas production and productivity had been positive. The cost of manure and labour is high in the chilli production and the net return from the crop is reasonable. Manure is the major input that involves more cost. Similarly, hiring labour is also costly and difficult to find agricultural labours. The input-output ration is reasonable wherein more concentration and research can increase the level of chilli production at high level. Thus, the government must come forward to concentrate more on chilli production through research and development, which has more scope for export earnings.

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