

# Cost of cultivation and price spread of chillies in guntur district of Andhra Pradesh

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## Abstract

The per hectare cost of cultivation of chillies for the period from 2005-06 to 2010-11 for Andhra Pradesh indicated that the operational costs ranged from ₹ 93,332 in 2005-06 to ₹ 1,84,391 in 2010-11. Similarly, the total costs varied from ₹ 1,09,597 to ₹ 2,21,656 for the corresponding periods. Among the operational costs the percentage of labour component in the total costs increased from 35.13 in 2005-06 to 40.00 in 2010-11. Analogously, among fixed costs, rental value of owned land as a percent of total cost rose from 12.77 in 2005-06 to 15.79 in 2010-11. During the corresponding period, net returns increased from ₹ 66,403 to ₹ 1,63,430 per hectare. The price spread analysis for the selected channel indicated that the producer received 64.45 per cent of consumer's price. The share of the wholesaler and the retailer worked out to 9.85 and 8.21 per cent respectively.

## Highlights

- Net returns increased from ₹ 66,403 to ₹ 1,63,430 per hectare. Producers' share in consumer rupee was 64.45 per cent. The share of the wholesaler and the retailer in consumers' price were 9.85 and 8.21 per cent respectively.

**Keywords:** Chilli, cost of cultivation, economic analysis, marketing channels, price spread

Chilli is the major spice contributing 40-42 per cent by volume 20-22 per cent by value of total spices exported from India (Jagtap *et al.* 2014). There are over 50 spices produced in India and good numbers of them are grown in the countries which are indigenous. Of these them pepper, cardamom, ginger and turmeric are important. Among spices, a few spices *viz.*, clove, nutmeg, vanilla and certain varieties of chillies were introduced to the country. Many varieties of chilli are grown for vegetables, spices, condiments, sauce and pickles. Chilli occupies an important place in Indian diet. It is an indispensable item in the kitchen as it is consumed daily as a condiment in one form or the other.

Among the spices consumed per head, dried chilli fruits constitute a major share (Rajur *et al.* 2008).

The most important chilli growing states in India are Andhra Pradesh (49%), Maharashtra (6%), Karnataka (15%) and Tamil Nadu (3%), which together constitute nearly 75 per cent of the total area. Andhra Pradesh tops the list in dry chilli production (49%) followed by Tamil Nadu (23%), Maharashtra (7%), Odisha (8%) and Karnataka (16%).

The present study was undertaken to analyse costs and returns of chilli production in Guntur district of Andhra Pradesh. Andhra Pradesh state is one of the important chilli growing areas of the country.

## Materials and methods

A three stage random sampling was followed in the selection of the ultimate sample. The sample represented 60 farmers were collected using pre-tested schedule to study the price spread of red chillies 20 traders to whom the sample farmers sold their produce were randomly selected and the relevant data collected.

## Results and discussion

The objective of economic analysis is to verify the use of various inputs of production and income incurred. There are many economic measures to determine the profitability of farm business. The most important criteria, which is commonly used to analyze efficiency of agricultural enterprise is getting the net return.

## Cost of Cultivation of Chillies in Andhra Pradesh

Per hectare cost of cultivation of chillies for the period from 2005-06 to 2010-11 for Andhra Pradesh is presented in Table 1. The operational costs ranged from ₹ 93, 332 in 2005-06 to ₹ 1, 84,391 in 2010-11. Similarly, the total costs varied from ₹ 1,09,597 to ₹ 2,21,656 for the corresponding periods. Among the operational costs the percentage of labour component in the total costs increased from 35.13 in 2005-06 to 40.00 in 2010-11. Analogously, among fixed costs, rental value of owned land as a percent of total cost rose from 12.77 in 2005-06 to 15.79 in 2010-11. During the corresponding period, net returns increased from ₹ 66, 403 to ₹ 1, 63,430 per hectare (Mishra *et al.* 1999).

**Table 1:** Cost of Cultivation of Chilli in Andhra Pradesh (₹ / hectare)

Particulars/Years	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	
Nursery Management Cost	3,000 (2.74)	3,625 (2.56)	4,000 (2.66)	4,562 (2.74)	4,875 (2.67)	5,650 (2.55)	
Human labour							
Mandays	385	405	412.5	425	437.5	492.5	
Charges (₹)	38,500 (35.13)	48,600 (38.05)	53,625 (35.70)	61,625 (37.07)	70,000 (38.28)	88,650 (40.00)	
Tractor power							
Plough	2.5 5.0	2.5 5.0	2.5 6.25	2.5 7.5	2.5 7.5	2.5 7.5	
Cultivator							
Charges (₹)	1,750 (1.60)	1,750 (1.37)	2,437 (1.62)	3,050 (1.83)	3,313 (1.81)	4,250 (1.92)	
Bullock labour							
Inter-cultivation	30	35	37.5	35	40	42.5	
Charges (₹)	3,000 (2.74)	3,500 (2.74)	4,500 (3.00)	4,900 (2.95)	6,000 (3.28)	8,500 (3.83)	
Seed							
Grams	250	250	275	250	275	250	
Value (₹)	5,250 (4.79)	5,750 (4.50)	6,875 (4.58)	6,250 (3.76)	6,875 (3.76)	7,000 (3.16)	
FYM							
Tonnes	5.0	6.25	12.5	7.5	6.25	5.0	
Value	2,000 (1.82)	2,813 (2.20)	7,500 (5.00)	6,000 (3.61)	6,250 (3.42)	6,000 (2.71)	
Fertilizers							
Qty(kgs): N	151	174	151	151	156	174	
P	92	92	92	92	92	92	
K	90	90	90	120	90	120	
Value (₹) N	2,460 (2.24)	3,025 (2.37)	2,625 (1.75)	2,790 (1.68)	3,050 (1.67)	3,970 (1.79)	
P	4,012 (3.66)	4,122 (3.23)	4,172 (2.78)	4,232 (2.55)	4,252 (2.33)	4,827 (2.18)	
K	1,350 (1.23)	1,387 (1.09)	1,425 (0.95)	1,900 (1.14)	1,500 (0.82)	2,100 (0.95)	
Others	1,063 (0.97)	1,125 (0.88)	1,175 (0.78)	1,250 (0.75)	1,313 (0.72)	1,438 (0.65)	
Insecticides	₹	24,643 (22.48)	26,413 (20.68)	30,223 (20.12)	34,463 (20.73)	35,133 (19.21)	38,125 (17.20)
Irrigation charges	₹	2,125 (1.94)	2,562 (2.01)	3,640 (2.42)	4,125 (2.48)	4,875 (2.66)	5,625 (2.53)
Interest on working capital	₹	4,179 (3.81)	4,889 (3.83)	5,727 (3.81)	6,335 (3.81)	6,911 (3.77)	8,256 (3.72)



Total operational cost	₹	93,332 (85.16)	1,09,201 (85.50)	1,27,925 (85.17)	1,41,482 (85.10)	1,54,347 (84.40)	1,84,391 (83.19)
Land revenue	₹	625 (0.57)	625 (0.49)	625 (0.42)	625 (0.38)	625 (0.34)	625 (0.28)
Depreciation	₹	600 (0.55)	600 (0.47)	600 (0.40)	600 (0.36)	600 (0.33)	600 (0.27)
Rental value of owned land	₹	14,000 (12.77)	16,250 (12.72)	20,000 (13.32)	22,500 (13.54)	26,250 (14.36)	35,000 (15.79)
Interest on fixed capital	₹	1,040 (0.94)	1,040 (0.81)	1,040 (0.69)	1,040 (0.62)	1,040 (0.57)	1,040 (0.47)
Total fixed cost	₹	16,265 (14.84)	18,515 (14.49)	22,265 (14.83)	24,765 (14.90)	28,515 (15.60)	37,265 (16.81)
Total cost	₹	1,09,597 (100)	1,27,716 (100)	1,50,190 (100)	1,66,247 (100)	1,82,862 (100)	2,21,656 (100)
Output	Qtls	55	57.5	60	58.75	56.87	49.37
	Price/qtl	3,200	4,150	4,200	4,200	4,500	7,800
Gross returns	₹	1,76,000	2,38,625	2,52,000	2,46,750	2,55,915	3,85,086
Net returns over total cost	₹	66,403	1,10,909	1,01,810	80,503	73,053	1,63,430
Net returns over operational cost	₹	82,668	1,29,424	1,24,075	1,05,268	1,01,568	2,00,695

**Note:** Figures in parentheses indicate percentages to total costs

### Marketing channels of chillies

Many intermediaries in the marketing channels of chillies *viz.*, village merchants, commission agents, wholesalers and retailers for disposal in the domestic market, and, exporters and agents of the exporters are involved in the export trade.

Village traders are the initiators of the trade as they play an important role for assembling the produce after the harvest of the chillies. They have good relations with commission agents and wholesalers from whom they get the trade information quite regularly. Traditionally, village merchants are in the trade as they play the role of financiers to the farmers, therefore there is a commitment on the part of the farmers to prefer village merchants. For their services they take certain price advantage with the farmers. Particularly in chillies trade one comes across even the commission agents acting as wholesalers and trade with other major assembling markets. Storing in AC godowns, another common practice normally is practised by the wholesalers. Particularly in Guntur area, large farmers also take the best advantage of the presence of cold storage units in good numbers for taking the price advantage. When it comes to inter-state movements wholesale traders play dominant role by storing the produce in the cold storages, bearing all the

associated costs like transportation, market fee and cold storage costs. The exporters and processors procure their produce in bulk through commission agents from the assembling markets competing with the other wholesalers. Following are the marketing channels traced in the chilli trade. Around 90 per cent of chilli is traded in the market by way of retailers and wholesalers and only 10 per cent within the village (Samshimastung and Giribabu 2016).

#### Channel I

Producer → Village Merchant → Commission agent  
Wholesaler → Non AC Cold-storage/Cold Storage  
→ Retailer → Local Consumer

#### Channel II

Producer → Village Merchant → Commission agent  
→ Wholesaler Secondary Whole sale trader  
Retailer → Domestic Consumer

#### Channel III

Producer → Commission Agent → Wholesaler/  
Processor → Dealer → Retailer → Consumer

#### Channel IV

Producer → Commission Agent → Wholesaler →  
Cold Storage → Retailer → Domestic Consumer

**Channel V**

Producer → Village Merchant → Whole seller  
Cold Storage → Exporter → Overseas Buyer →  
Alien Consumer

selected channel the producer received 64.45 per cent of consumer's price (Table 2). The share of the wholesaler and the retailer worked out to 9.85 and 8.21 per cent respectively (Jagtap *et al.* 2014).

**Price spread of dry chilli in Guntur district**

As indicated by the price spread analysis for the

**Table 2:** Price spread of Chilli in Guntur District - 2011 in (Rs/Qtl)

	Particulars	Amount	Percentage to consumer's price
A	<b>Costs incurred by producer</b>		
	i. Cost of gunny bags	75	0.59
	ii. Weighing ,loading and unloading	50	0.39
	iii. Transportation	75	0.59
	iv. Taxes if any	-	
	v. Commission to commission agent	352	2.76
	vi. Miscellaneous charges	32.5	0.25
	<b>Total</b>	<b>584.5</b>	<b>4.59</b>
	Producer's sale price	8,800	69.04
	Producer's net sale price	8,215.5	64.45
B	<b>Costs incurred by wholesaler</b>		
	i. Cost of gunny bags	42	0.33
	ii. Weighing ,loading and unloading	45	0.35
	iii. Transportation	62.5	0.49
	iv. Storage	300	2.35
	v. VAT	370	2.90
	vi. Rent	65	0.51
	vii. Miscellaneous (packing material and labour cost)	350	2.75
	<b>Total</b>	<b>1,234.5</b>	<b>9.68</b>
	Wholesaler's margin	1,255	9.85
	Wholesaler's sale price/retailer's purchase price	11,289.5	88.57
C	<b>Costs incurred by retailer</b>		
	i. Cost of gunny bags	-	
	ii. Labour charges	150	1.18
	iii. Taxes	-	
	iv. Transportation	140	1.10
	v. Miscellaneous charges	120	0.94
	<b>Total</b>	<b>410</b>	<b>3.22</b>
D	Retailer's margin	1,047	8.21
	Retailer's sale price /Consumer's purchase price	12,746.5	100



## Conclusion

The main objective of the present study was to calculate the cost of cultivation and price spread of chillies in Guntur. The results of the study indicated that, the operational costs ranged from ₹ 93, 332 in 2005-06 to ₹ 1, 84,391 in 2010-11. Similarly, the total costs varied from ₹ 1, 09,597 to ₹ 2, 21,656 for the corresponding periods. Among the operational costs the percentage of labour component in the total costs increased from 35.13 in 2005-06 to 40.00 in 2010-11. Similarly, among fixed costs, rental value of owned land as a percent of total cost rose from 12.77 in 2005-06 to 15.79 in 2010-11. During the corresponding period, net returns increased from ₹ 66, 403 to ₹ 1,63,430 per hectare. The share of producer in the consumer's rupee was 64.45 per cent for selected channel. The share of the wholesaler and the retailer worked out to 9.85 and 8.21 per cent respectively.

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