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## **Marketing of Chillies in Thoothukudi District of Tamilnadu**

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### **Abstract:**

*Chilly is considered as one of the most important commercial spice crops and is widely used universal spice, named as wonder spice. The world area and production of chilly is 15 lakh hectares and 70 lakh tonnes respectively. India contributes 36% share in global production, followed by China (11%), Bangladesh (8%), Peru (8%) and Pakistan (6%). In India, Andhra Pradesh tops the list in dry chilly production (49%) followed by Tamil Nadu (23%), Maharashtra (7%), Odisha (8%) and Karnataka (16%). In Tamil Nadu, chilly is cultivated both in irrigated and rainfed conditions. During the period 2009-10, chilly was cultivated to the extent of 62006 hectares in Tamil Nadu with the production of 31230 tonnes and the average productivity during the period was 632.54 Kg/ha. Since chilly is a widely used spice in food preparation it has good demand from the processing industries. Fluctuations in market prices greatly influence the lives of thousands of chilly farmers. There is a need to study the existing marketing systems and channels and their performance in terms of efficiency. With the above background, a study was carried out in Thoothukudi district of Tamil Nadu (Major producer) with two objectives viz; i) to estimate the post-harvest losses in chilly, ii) to identify the marketing channels in chilly marketing and marketing efficiency. Considering area and production indicators, Thoothukudi district in Tamil Nadu was purposely selected for the study. Four villages in Vilathikulam taluk were randomly selected and 15 farmers were selected randomly from each selected village and finally came up with 60 farmers. The intermediaries involved in the channel of chilly namely village traders, commission agents, wholesalers, processors and retailers numbering 43 persons were drawn from the channel. Both primary and secondary data were used for the study. The post-harvest loss for per quintal of chilly was 6.8 kilograms per quintal. There were five marketing channels identified in the study area. The price spread was Rs.3745, Rs.3295, Rs.2640, Rs.2015 and Rs.5300 for channels I, II, III, IV and V respectively. Farmer's share in consumer's rupee was 50.57, 63.59, 73.39, 77.10 and 55.83 per cent of consumer's rupee in channels I, II, III, IV and V respectively. Among the five channels, channel IV was efficient according to both Acharya's approach (2.19) and Shepherd's approach (2.84).*

### **1. Introduction**

Chilly is considered as one of the most important commercial spice crops and is widely used universal spice, named as wonder spice. The world area and production of chilly is 15 lakh hectares and 70 lakh tonnes respectively. India contributes 36% share in global production, followed by China (11%), Bangladesh (8%), Peru (8%) and Pakistan (6%). In India, Andhra Pradesh tops the list in dry chilly production (49%) followed by Tamil Nadu (23%), Maharashtra (7%), Odisha (8%) and Karnataka (16%). In Tamil Nadu, chilly is cultivated both in irrigated and rainfed conditions. Ramanathapuram, Thoothukudi, Sivagangai and Virudhunagar are some major chilly producing districts in Tamil Nadu. During the period 2009-10, chilly was cultivated to the extent of 62006 hectares in Tamil Nadu with the production of 31230 tonnes and the average productivity during the period was 632.54 Kg/ha. The average productivity of chilly in Thoothukudi district was 417.25 Kg/ha with an average production of 7074.62 tonnes. Since chilly is a widely used spice in food preparation it has good demand from the processing industries. Fluctuations in market prices greatly influence the lives of thousands of chilly farmers. There is a need to study the existing marketing systems and channels and their performance in terms of efficiency. With the above background, a study was carried out in Thoothukudi district of Tamil Nadu with two objectives viz; i) to estimate the post-harvest losses in chilly, ii) to identify the marketing channels in chilly marketing and marketing efficiency.

## 2. Methodology

A brief account of the research methodology followed in this study is presented below.

### 2.1. Study Area and Sampling

Considering area and production indicators, Thoothukudi district in Tamil Nadu was purposely selected for the study. Vilathikulam taluk was purposively selected for this study due to high area and production. Four villages in Vilathikulam taluk were randomly selected and 15 farmers were selected randomly from each selected village and finally came up with 60 farmers. The intermediaries involved in the channel of chilly namely village traders, commission agents, wholesalers, processors and retailers numbering 43 persons were drawn from the channel. Both primary and secondary data were used for the study.

### 2.2. Analysis

#### 2.2.1. Descriptive Analysis

Averages and percentages were used to examine the post-harvest losses and marketing of chilly.

#### 2.2.2. Price Spread Analysis

Price spread in general is referred to as difference between the price paid by the ultimate consumer and that received by the growers per unit of the commodity. Price spread analysis would estimate the share of different market functionaries in the consumer's rupee and this would often facilitate the understanding of the relative efficiencies and otherwise of alternate marketing channels.

#### 2.2.3. Farmer's Share in Consumer's Rupee

Farmer's share in consumer rupee was calculated with the help of the following formula.

$$F_s = (F_p/C_p) \times 100$$

Where,

$F_s$  = Farmer's share in consumer rupee (percentage)

$F_p$  = Farmer's net selling price

$C_p$  = consumer's price

Same formula was used to know the share of different market intermediaries in the consumer rupee.

#### 2.2.4. Estimation of Marketing Efficiency

Marketing efficiency is the degree of market performance. The movement of goods from the producers to the ultimate consumers at the lowest possible cost consistent with the provision of service desired by the consumers is termed as efficient marketing. The following formulae were used to estimate the marketing efficiency of different channels of marketing chilly.

- **Shepherd's Formula**

Shepherd (1972) estimated marketing efficiency as the ratio of consumer's price to the total marketing costs and margins. Higher the ratio, higher would be the efficiency and vice versa. This can be expressed in the following form:

$$ME = \frac{CP}{MC + MM}$$

$ME = FP \div (MC + MM)$
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Where,

ME = Marketing efficiency

CP = Consumers' purchase price

MC = Marketing costs

MM = Marketing margins

- **Acharya's Approach**

According to Acharya (2003), an ideal measure of marketing efficiency, particularly for comparing the efficiency of alternate market channels should take into account all of the following:

- Total marketing costs (MC)
- Net marketing margins (MM)
- Price received by the farmer (FP)
- Price paid by the consumer (RP)

The following measure is suggested by Acharya.

### 3. Results And Discussion

Data collected were analysed with reference to the objectives and the results are presented and discussed below.

#### 3.1. Post-harvest losses

Sl. No	Particulars	Per Quintal Losses in Kg
1.	Grading and Packing	2.83
2.	Handling and Transportation	2.1
3.	Harvesting	1.89
	<b>Total</b>	<b>6.82</b>

Table 1: Post Harvest Losses in Chilly in the Sample Farms

Table 1 shows the post-harvest losses of chilly among the sample farmers per quintal. It could be noticed that major loss was in grading and packing, it was about 2.83 kg, followed by 2.1 kg in handling and transportation and 1.89 kg in harvesting itself. So, for per quintal of chilly the total loss was 6.82 Kilograms. According to Sharma and Singh (2011), The maximum post-harvest loss of 15.16 per cent was found in tomato, followed by French bean (11.06%), Brinjal (11.00%), pea (10.06%), chilly (9.89%), Okra (8.54%), cauliflower (8.27%), potato (6.94%), onion (5.95%), cabbage (5.33%) and capsicum (4.59%).

#### 3.2. Marketing Channels

To understand the marketing practices and problems in marketing of chilly, different marketing channels through which it was marketed were traced out. The following marketing channels were identified in the study area.

Sl. No	Channels	Functionaries
1.	Channel I	Producer – Village Trader – Commission Agent – Wholesaler – Retailer – Consumer
2.	Channel II	Producer – Village Trader – Wholesaler – Retailer – Consumer
3.	Channel III	Producer – Commission Agent – Wholesaler – Retailer – Consumer
4.	Channel IV	Producer – Commission Agent – Retailer – Consumer
5.	Channel V	Producer – Processor – Retailer – Consumer

Table 2: Identified Marketing Channels

There were five marketing channels identified in the study area. Jagdish (2001) in his study on vegetables production and marketing in Bihar, found that more than 80 per cent of the farmers sold their produce through the market intermediaries namely commission agents and village merchants. The share of different market functionaries in the consumer's rupee were estimated through the price spread analysis and it was depicted in the following tables.

Sl. No	Particulars	Channel I (Rs/qtl)	Per cent to the consumer Price	Channel II (Rs/qtl)	Per cent to the consumer Price
<b>1</b>	<b>Producer</b>				
	Net price received by the producer	5755.00	60.57	5755.00	63.59
<b>2</b>	<b>Village trader</b>				
	Price paid by the village trader	5,755.00	60.57	5755.00	63.59
	Marketing cost	594.00	6.25	594.00	6.53
	Profit margin	670.00	7.05	641.00	7.08
	Marketing margin	1264.00	13.30	1235.00	13.64
	Price received by the village trader	7019.00	73.88	6990.50	77.23
<b>3</b>	<b>Wholesaler</b>				

	Price paid by the wholesaler	7019.00	73.88	6990.00	77.23
	Marketing cost*	1015.00	10.68	580.00	6.40
	Profit margin	766.00	8.06	629.00	6.95
	Marketing margin	1781.00	18.74	1209.00	13.36
	Price received by the wholesaler	8800.00	92.63	8200.00	90.60
<b>4</b>	<b>Retailer</b>				
	Price paid by the retailer	8800.00	92.63	8200.00	90.60
	Marketing cost	336.00	3.53	364.00	4.02
	Profit margin	428.00	4.50	466.00	5.14
	Marketing margin	700.00	7.36	830.00	9.17
	Price received by the retailer	9500.00	100.00	9050.00	100.00
	<b>Price spread</b>	<b>3745.00</b>	<b>39.43</b>	<b>3295.00</b>	<b>36.41</b>

Table 3: Price Spread of Chilly in Marketing Channel – I and II

\* Marketing cost for wholesaler: including commission charges paid to commission agents in channel I only.

The marketing channel I comprised producer, village trader, commission agent, wholesaler, retailer and consumer. It was shown in Table 3 along with price spread. It could be observed from the table that in marketing channel I, the net price received by the farmers was Rs.5,755.00/qtl, which constituted about 60.57 per cent of the consumer price. The marketing cost which means the value addition incurred by the wholesaler like form value (cleaning, grading, handling), Place value (transportation) and the commission charges for the commission agents was highest for the wholesaler, which constituted about 10.68 per cent of the consumer price followed by village trader (6.25 per cent), retailer (3.53 per cent). Profit margin was highest for the wholesaler, which constituted about 8.06 per cent of the consumer's price followed by village trader (7.05 per cent) and retailer (4.50 per cent). The total marketing margin was highest for wholesaler (18.74 per cent), followed by village trader (13.30 per cent) and retailer (7.36). The difference between net price received by the farmer and price paid by the consumer was Rs. 3,745/qtl and this was the maximum price spread in all the four identified marketing channels. Channel I was the lengthiest channel among all five marketing channels. Rajavel (2005) estimated price spread in supply chain of carrot in Hoskote taluk of Bangalore district of Karnataka. The gross price received by the farmers, village merchant, wholesaler and retailer was 44.24 per cent 54 per cent, 58.30 per cent and 100 per cent of the final price, respectively

The marketing channel II characterized by the presence of producer, village trader, wholesaler, retailer and consumer. It was shown in Table 3. In channel II, transfer of produce to the consumers took place without the involvement of the commission agent. The net price received by the farmer was same as in channel I (5,755.00). The cost of marketing was highest to the village trader, which constituted about 6.53 per cent of the consumer price, followed by wholesaler (6.40 per cent) and retailer (4.02 per cent). The profit margin was highest for the village trader (7.08 per cent), followed by the wholesaler (6.95 per cent) and the retailer (5.14 per cent). The marketing margin was highest for the village trader (13.64 per cent), followed by wholesaler (13.36 per cent) and retailer (9.17 per cent). Price spread in channel II was Rs.3,295/qtl, which was less than the price spread in channel I.

Sl. No	Particulars	Channel III (Rs/qtl)	Per cent to the consumer Price	Channel IV (Rs/qtl)	Per cent to the consumer Price
<b>1</b>	<b>Producer</b>				
	Net price received by the producer	6785.00	73.39	6785.00	77.10
<b>2</b>	<b>Wholesaler</b>				
	Price paid by the wholesaler	6785.00	73.39	-	-

	Marketing cost	1075.00	11.40	-	-
	Profit margin	625.00	6.63	-	-
	Marketing margin	1700.00	18.03	-	-
	Price received by the wholesaler	8485.00	90.02	-	-
<b>3</b>	<b>Retailer</b>				
	Price paid by the retailer	8485.00	90.02	6875.00	77.10
	Marketing cost*	364.00	3.86	1075.00	12.21
	Profit margin	576.00	6.11	940.00	10.68
	Marketing margin	940.00	9.97	2015.00	29.69
	Price received by the retailer	9425.00	100.00	8800.00	100.00
	<b>Price spread</b>	<b>2640.00</b>	<b>26.61</b>	<b>2015.00</b>	<b>22.90</b>

Table 4: Price Spread of Chilly in Marketing Channel – III and IV

\*Marketing cost for wholesaler: including commission charges paid to commission agents in channel IV only.

In marketing channel III the members are the producer, commission agent, wholesaler, retailer and consumer. It was shown in Table 4. This channel flows without the involvement of the village trader. The net price received by the farmer in channel III was more than the price received in channel I and channel II. In channel III, the farmers received Rs.6,785/qlt, which constituted about 73.39 per cent of the consumer price.

Mohapatra (2001) in his study on production and marketing of onion in Bolangir district, Orissa, identified that the producer received the maximum share (76 per cent) of consumer's rupee, when sold through the wholesaler. The marketing cost incurred in channel III was highest to the wholesaler. In channel III the marketing cost for wholesaler was 11.40 per cent and 3.86 per cent for retailer of the consumer price. The profit margin was highest to wholesaler, constituting 6.63 per cent of the consumer price. It was followed by the retailer who received 6.11 per cent of the consumer price. The total marketing margin was highest for the wholesaler and the retailer which was 18.03 per cent and 9.97 per cent respectively. The price spread in channel III was Rs.2,640/qlt, which was less than the price spread in channel I & II.

The members in the marketing channel IV are producer, commission agent, retailer and consumer. It was shown in Table 4. This channel excludes village trader and wholesaler. The price spread was the least in channel IV and it was Rs. 2,015/qlt. The marketing cost for the retailer accounted for 12.21 per cent of the consumer price. Here the value addition done by the commission agent in the absence of village trader and wholesaler. In the case of profit margin the commission agent, the retailer receiving 10.68 per cent of the consumer price as his profit margin. The total marketing margin was highest for the retailer which was 29.69 per cent. The price spread in channel III was Rs.2,015/qlt, which was less than the price spread in channel I, II & III. Shelke (2009) studied price spread of major vegetables in Parbhani market, suggested that the producers can be highly benefited and increase their share to 95.85 per cent from 55.35 per cent in consumers price by selling their vegetables directly to consumer rather than selling to wholesalers.

The participants in the marketing channel V are producer, processor, retailer and consumer. It was shown in Table 5. The price spread in the channel V was Rs.5300/qlt.

Sl. No	Particulars	Amount (Rs/qlt)	Percent to Consumer rupee
<b>1</b>	<b>Producer</b>		
	Net price received by the producer	6700.00	55.83
<b>2</b>	<b>Processor</b>		
	Price paid by the processor	6700.00	55.83
	Processing cost	1218.33	10.15
	Marketing cost	746.67	6.22

	Profit margin	1135.00	9.45
	Marketing margin	3100.00	25.83
	Price received by the processor	9800.00	81.67
<b>3</b>	<b>Retailer</b>		
	Price paid by the retailer	9800.00	81.67
	Marketing cost	650.00	5.41
	Profit margin	1550.00	12.91
	Marketing margin	2200.00	18.33
	Price received by the retailer	12000.00	100.00
	<b>Price spread</b>	<b>5300.00</b>	<b>44.17</b>

Table 5: Price Spread of Chilly in Marketing Channel – V

The marketing cost to the processor accounted for 6.22 per cent of the consumer price and the retailer accounted for 5.41 per cent. In case of profit margin, the retailer accounted for 12.91 per cent and the processor accounted for 9.45 per cent of the consumer price. The total marketing margin was highest for the processor, followed by retailer which was 25.83 per cent and 18.33 per cent respectively.

To sum up, price spread was highest in channel I and lowest in channel IV.

Sl. No	Market Channels	Price received by the farmer (Rs/qtl)	Price paid by the consumer (Rs/qtl)	Price Spread (Rs/qtl)	Farmer's share (%)
1	Channel – I	5,755 (60.57)	9,500 (100.00)	3,745 (39.43)	60.57
2	Channel – II	5,755 (63.59)	9,050 (100.00)	3,295 (36.41)	63.59
3	Channel – III	6,785 (73.39)	9,425 (100.00)	2,640 (28.01)	73.39
4	Channel - IV	6,785 (77.10)	8,800 (100.00)	2,015 (22.90)	77.10
5	Channel – V	6,700 (55.83)	12000 (100.00)	5300 (44.17)	55.83

Table 6: Price Spread and Farmers share in Different Channels of Chilly Marketing

The farmers share in consumer rupee was calculated and showed in table 6. Among the five different channels, farmer's share in consumer's rupee was relatively higher in channel IV (77.10 per cent), followed by channel III (73.39 per cent), channel II (63.59 per cent), channel I (60.57 per cent) and channel V (55.83 per cent). Even though the farmer's share in consumer's rupee was more in channel IV than the others, most of the farmers in this study area preferred channel I & III for disposing their produce due to convenience of disposal at farm gate itself. Practice of selling chillies directly to processors was followed by few followers only.

### 3.3. Marketing Efficiency

Marketing is said to be efficient if the total marketing margins are higher per unit of marketing cost. The marketing efficiency in different marketing channels for chilly was estimated using the following two methods. More than one method was used to check the accuracy of the efficiency. 1. Acharya's approach 2. Shepherd's formula

### 3.4. Acharya's Approach

Sl. No	Market Channels	Net price received by the farmer(Rs)	Marketing cost + Marketing margin (Rs)	Marketing efficiency
1	Channel – I	5,755	5690.00	1.01
2	Channel – II	5,755	4812.00	1.19
3	Channel – III	6,785	4079.00	1.66
4	Channel – IV	6,785	3090.00	2.19
5	Channel – V	6,700	6696.67	1.00

Table 7: Marketing Efficiency of Chilly – Acharya's Approach

### 3.5 Shepherd's formula

Sl. No	Market Channels	Value of goods Sold (Rs)	Total marketing cost (Rs)	Marketing efficiency
1	Channel – I	9,500	5690.00	1.66
2	Channel – II	9,050	4812.00	1.88
3	Channel – III	9,425	4079.00	2.31
4	Channel – IV	8,800	3090.00	2.84
5	Channel – V	12,000	6706.67	1.79

Table 8: Marketing Efficiency of Chilly – Shepherd's Formula

The results of marketing efficiency are presented in Table 7 and Table 8. The results revealed that the marketing efficiency was relatively higher in channel IV in both the approaches, *ie.*, Acharya's approach and Shepherd's approach.

## 4. Summary and Conclusion

The post-harvest loss for per quintal of chilly in the study area was 6.8 kilograms per quintal. There were five marketing channels identified in the study area. The price spread was Rs.3745, Rs.3295, Rs.2640, Rs.2015 and Rs.5300 for channels I, II, III, IV and V respectively. Farmer's share in consumer's rupee was 50.57, 63.59, 73.39, 77.10 and 55.83 per cent of consumer's rupee in channels I, II, III, IV and V respectively. Among the five channels, channel IV was efficient according to both Acharya's approach (2.19) and Shepherd's approach (2.84).

## 5. References

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