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## A comprehensive study on price spread and marketing efficiency of colour capsicum in Pune district of Maharashtra

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### Abstract

Colour capsicum (*Capsicum annuum* L.), grown under shade net conditions, is a high-value horticultural crop gaining prominence due to its quality, market demand, and profitability. Protected cultivation enhances yield, quality, and income potential for farmers. The present study aims to analyse the price spread and assess the marketing efficiency of colour capsicum under shade net cultivation to identify the most remunerative marketing channels.

The study was carried out in Pune district of Maharashtra, focusing on two purposively selected tahsils Baramati and Indapur based on their large area under colour capsicum cultivation. Three villages were randomly selected from each tahsil, making a total of six villages. From these, 90 colour capsicum farmers were selected and categorized into two separate groups. Primary data collected for the agricultural year 2023-24 were analysed using simple tabular methods and functional analytical tools. The analysis of production and disposal patterns of colour capsicum indicated that (99.79%) of the total produce was marketed. Two marketing channels were identified for colour capsicum, with Channel II (Producer-Wholesaler-Retailer- Consumer) being the most preferred by farmers. The highest price spread of ₹ 3387 was observed in Channel I, attributed to the greater number of intermediaries and market places involved and ₹ 729.28 for channel II.

**Keywords:** Colour capsicum, marketing, marketing efficiency, price spread

### Introduction

(*Capsicum* spp), commonly known as pepper, is a member of the Solanaceae family. Often referred to as sweet pepper, bell pepper, or Shimla Mirch, it is a popular vegetable widely cultivated across India. Capsicum is widely known as a highly preferred vegetable and salad. Capsicum is also called as sweet pepper due to absence of capsaicin thus it has taken up the role of an important vegetable crop around Among various vegetables it holds significance due to its nutritional value and market demand (Maitra *et al.*, 2024) [6]. It is extensively grown in countries such as India, China, Mexico, Indonesia, and Spain. The fruit of capsicum is classified as a berry and includes a range of varieties, such as sweet peppers, chili peppers, and bell peppers. In modern agriculture, capsicum is recognized as a significant vegetable and cash crop, alongside other key crops like tomatoes, potatoes, and onions. Approximately 36 million tonnes of capsicum was produced worldwide from 2 million hectares area, led by China (46% of the total production), followed by Mexico, Indonesia, and Turkey (Anon. 2023) [1]. Capsicum is important vegetable crop in Maharashtra. It was cultivated on an area of 4.32 thousand ha with a total production of 39.27 thousand MT and productivity of 9.10 T/ha during 2023-24.

### Materials and Methods

The sampling process for the present study involved the purposive selection of the study area, including the district, tahsils, villages, cultivators, and markets. Pune district was purposively selected due to maximum numbers of cultivators under colour capsicum. Among its 14 tahsils, Baramati and Indapur had a maximum cultivators under colour capsicum and were therefore selected at the second stage. Subsequently, three villages from each tahsil were purposively identified, resulting in a total of six villages.

From each village, 15 colour capsicum growers were randomly selected, constituting a total sample size of 90 respondents for the study.

### Tools of Analysis

**Total Marketing Cost:** For calculating total marketing cost, this formula was used.

$$C = Cr + Cm1 + Cm2 + \dots + Cmn$$

Where,

C = Total marketing cost

Cr = Cost paid by the producer from the time the produce leaves the farm till he sells it.

Cm = Cost incurred by its middleman in the process of buying and selling the product.

**Marketing Margin:** The intermediary's margin is the difference between the total market payments he makes during his transaction. For obtaining marketing margin following formula was used.

$$MT = \sum (Si - Pi) / Qi$$

Where,

MT = Total Marketing Value

Si = Sell value of a product paid by  $i^{th}$  firm

Pi = Purchase value of product paid by  $i^{th}$  firm

Qi = Quantity of product handled by  $i^{th}$  firm

**Price Spread:** Price spread means difference between consumer's price and price received by the farmer. In this study, price spread covered the overall cost of marketing as well as the profit or loss made by intermediaries in the process of moving produce from the farm to the customer.

$$Ps = Cp - Pf$$

Where,

Cp = Consumer's Price

Pf = Price received by the farmer

**Marketing Efficiency (ME):** The marketing efficiency was calculated by using the modified method suggested by Achary and Agarwal (2001).

$$MME = RP / (MC + MM)$$

Where,

MME = Modified measure of marketing efficiency

RP = Price paid by consumer or retailers sell price

MC = Total marketing cost MM = Net marketing margin

### Result and Discussion

The following were the key marketing channels observed in colour capsicum marketing during the study.

1. Producer- Aggregators- Wholesaler- Retailer- Consumer.
2. Producer - Wholesaler- Retailer- Consumer.

### Cost of marketing colour capsicum

Table 1 presents the marketing costs incurred by colour capsicum producers across various post-harvest operations, including loading-unloading, packing, transportation, and commission charges.

Marketing encompasses various functions such as loading-unloading, packing, transportation, and handling of produce. The costs associated with these activities play a crucial role in colour capsicum marketing, as they directly influence both consumer prices and producer profitability.

**Table 1:** Channel wise per quintal marketing cost incurred by colour capsicum farmers

Sr. No.	Particulars	Channel	
		Small	Large
1	Grading charge	36.5 (11.25)	31 (14.59)
2	Packing material charges	35 (10.79)	35 (16.47)
3	Transport charges	34 (10.48)	38 (17.88)
4	Hamali	6.5 (2)	11.25 (5.29)
5	Commission charges	0 0	0 0
6	Other (Breakfast, meal, etc.)	212.5 65.49 (0.2)	163 76.71 (0.36)
7	Total marketing cost	324.5 (100)	212.5 (100)
8	Average price received	6272.5	8350
	Net Price realized	5948	7137.5

It could be revealed from the Table 1. that, the per quintal cost of marketing of colour capsicum for small and large size groups was ₹ 324.50 and ₹ 212.50, respectively. Thus, the per quintal marketing cost was highest in the small size group, indicating higher marketing expenditure compared to large farmers due to the role of aggregators. Among the marketing costs, other expenses (breakfast, meal, etc.) and transportation charges were the major items, contributing the highest share in total marketing cost.

### Price spread in different marketing channels of colour capsicum

The price spread represents the gap between the amount paid by the consumer and the price realized by the producer, encompassing all post-harvest expenses and the profit margins of intermediaries. The detailed breakdown of costs and margins associated with each agency in the marketing structure is provided in Table 2.

**Table 2:** Price spread in different channels of colour Capsicum, (₹/ q)

Sr. No.	Particulars	Channel I	Channel II
1	<b>Gross price received by Farmer</b>	6272.5 (100)	8350 (91.9)
	i) Marketing cost	324.5 (3.36)	212.5 (2.34)
	ii) Net price realized	5948 (61.57)	7137.5 (73.88)
	<b>Aggregators</b>		
2	i) Price paid	6272.5 (64.93)	0
	ii) Marketing cost	330.5 (3.42)	0
	iii) Marketing margin	377.5 (3.91)	0
	iv) Price received	6650 (68.84)	0
	<b>Wholesaler</b>		
3	i) Price paid	6650 (68.84)	8350 (91.96)
	ii) Marketing cost	250.5 (2.59)	150.5 (1.66)
	iii) Marketing margin	290 (3)	280 (3.08)
	iv) Price received	7265.5 (75.21)	8630 (95.05)
	<b>Retailer</b>		
4	i) Price paid	7265.5 (75.21)	8630 (95.05)
	ii) Marketing cost	298.12 (3.09)	110.45 (1.22)
	iii) Marketing margin	2096.38 (21.7)	339.44 (3.74)
	iv) Price received	9660 (100)	9079.89 (100)
	<b>Consumer</b>		
	i) Price paid	9660 (100)	9079.89 (100)
	Price spread	3387	729.28

(Figures in the parentheses is the percentages to the price paid by consumer)

The Table 2 indicated that the producer received a net price of ₹ 6272 in Channel I, ₹ 8350 in Channel II. The lowest price spread was recorded in Channel II (Producer-Wholesaler-retailer -consumer) due to minimal marketing costs and margins. The highest price spread of ₹ 3387 was observed in Channel I, attributed to the greater number of intermediaries and market places involved and ₹ 729.28 for channel II.

The estimated producer's share in the consumer rupee was (61.57%) in Channel I, and (73.88%) in Channel II. This indicated that Channel II was the most profitable, allowing colour capsicum farmers to retain the highest share of the consumer price.

#### Channel wise marketing efficiency of colour capsicum

Marketing efficiency was assessed using the modified method proposed by Acharya and Aggarwal (1999), which provides a comprehensive framework for evaluating the efficiency of marketing channels based on costs and price realization.

**Table 3:** Channel wise marketing efficiency of colour capsicum

Sr. No.	Particulars	Size Groups	
		Channel I	Channel II
1	Net price received by farmer	5948	7137.5
2	Total marketing cost	1203.62	473.45
3	Total Marketing Margin	2763.88	619.44
	MM + MC	3967.5	1092.89
4	Price paid by consumer	9660	9079.89
5	Marketing efficiency ratio	2.43	8.31

According to Table 3, the marketing efficiency was maximum in Channel-II (8.31), followed by Channel-I (2.43). The higher efficiency observed in Channel-II indicates a more cost-effective and profitable marketing channel for colour capsicum compared to Channel-I. Similar results were observed in the study conducted by Kalia *et al.* (2021) supporting the present findings.

#### Conclusion

1. Following channels was identified for marketing of colour capsicum in research area i) Producer-Aggregator-Wholesaler-Retailer-Consumer, ii) Producer - Wholesaler - Retailer - Consumer. Among the two, Channel II accounted for the majority of colour capsicum sales.
2. The average per quintal marketing cost is ₹ 324 in Channel I, and for Channel II it is ₹ 212.5. The producer's share in the consumer rupee was (61.57%) in Channel-I and (73.88%) in Channel-II. The maximum marketing efficiency was highest 8.31 in channel II.

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