



## RESEARCH ARTICLE :

# Marketing channels, cost, margins and price spread of Bt cotton in Bharuch district of South Gujarat

■ J. M. Khichadiya and J. J. Makadia

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**SUMMARY :** This study was conducted for estimation of marketing cost, marketing margin and price spread through different marketing channels of *Bt* cotton in Bharuch district of South Gujarat region. Two major marketing channels were identified for the *Bt* cotton *i.e.*, Channel-I: Producer → CCI (Cotton Corporation of India) and Channel-II: Producer → Commission Agent → Ginner → Consumer. The producer could secure about 88.24 and 83.00 per cent of consumer's rupee in channel-I and channel-II of Bharuch district, respectively. Thus, the channel-I in Bharuch district was found to be more efficient as compared to other channels. The major problems faced by the farmers in production of *Bt* cotton found that, non-availability of agricultural labour during peak seasons, lack of availability of recommended plant protection chemicals, high incidence of attack from bollworms, non-availability of quality seeds of *Bt* cotton in time, lack of availability and high cost of recommended fertilizers, growth of weeds, lack of irrigation facilities.

## KEY WORDS :

*Bt* cotton, Marketing channel, Marketing cost, Marketing margin, Price spread

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## BACKGROUND AND OBJECTIVES

Cotton is also known as “white gold” and “king of appraisal fibre”. Cotton is the most important fibre crop plays a vital role in economy. Cotton is a soft, fluffy staple fibre that grows in a boll or protective case, around the seeds of the cotton plants of the genus *Gossypium* in the mallow family Malvaceae. The fibre is almost pure cellulose. Under natural conditions, the cotton boll will increase the dispersal of the seeds.

In India, there are ten major cotton growing states which are divided into three zones, *viz.*, North zone, Central zone and

South zone. North zone consists of Punjab, Haryana and Rajasthan. Central zone includes Madhya Pradesh, Maharashtra and Gujarat. South zone comprises Andhra Pradesh, Telangana, Karnataka and Tamil Nadu. Besides these ten states, cotton cultivation has gained momentum in the Eastern state of Orissa. Cotton is also cultivated in small areas of non-traditional states such as Uttar Pradesh, West Bengal and Tripura.

There are four cultivated species of cotton *viz.*, *Gossypium arboreum*, *G. herbaceum*, *G. hirsutum* and *G. barbadense*. The first two species are diploid (2n=26) and are native to old world. They are

## Author for correspondence :

**J.M. Khichadiya**

Department of  
Agricultural Economics,  
N. M. College of  
Agriculture, Navsari  
Agricultural University,  
Navsari (Gujarat) India  
Email: [jkhichadiya11@gmail.com](mailto:jkhichadiya11@gmail.com)

See end of the article for  
authors' affiliations

also known as Asiatic cottons because they are grown in Asia. The last two species are tetraploid (2n=52) and are also referred to as New World Cottons. *G. hirsutum* is also known as American cotton or upland cotton and *G. barbadense* or Sea Island cotton or Peruvian cotton or Tanguish cotton or quality cotton. *G. hirsutum* is the predominant species which alone contributes about 90 per cent to the global production. Perhaps, India is the only country in the world where all the four cultivated species are grown on commercial scale.

Gujarat is a vibrant state in agricultural sector in terms of gross production, productivity per hectare, adoption of innovations and technologies, crop diversification, introduction of new crops, post-harvest technology and management. Gujarat has diversified cropping pattern including the food grains and pulses, cash crops and oil seeds. Major food grain crops are wheat, paddy, Bajara, maize etc. and pigeonpea, gram, green gram are the major pulses grown in the state. Cotton, castor, groundnut, mustard are the important oilseed crops of the state and the state has notable achievement in production and productivity in cotton, castor and groundnut. Cotton is an important crop of the state which covered 26.24 lakh hectares area under cultivation and produced 328 lakh bales during 2018-19 (Source: <https://www.indiastat.com>).

## RESOURCES AND METHODS

The study was conducted in Bharuch district of South Gujarat region. To study marketing cost, margins and channels of marketing the no. of market functionaries. The schedule was designed for collecting information from different market functionaries of selected market. The primary data was collected by survey method adopting personal interview of the market functionaries with the help of framed survey schedule. The producer's share, marketing costs and margins of different middlemen in the marketing of Bt cotton was worked out for the identified channels. A simple tabular analysis has been done.

### Total cost of marketing:

The total cost incurred on marketing of Bt cotton by the farmers and the intermediaries involved in the process of marketing was calculated as:

$$C = C_f + C_{m1} + C_{m2} + C_{m3} + \dots + C_{mn}$$

where,

C = Total cost of marketing.

$C_f$  = Cost paid by the producer in marketing of Bt cotton

$C_{mi}$  = Cost incurred by the  $i^{th}$  middlemen in the process of marketing.

### Marketing margin:

The absolute and percentage margin of middle men involved in the marketing of Bt cotton was calculated as:

#### Absolute margin of $i^{th}$ middlemen ( $A_{mi}$ ):

$$= P_{Ri} - (P_{pi} + C_{mi})$$

#### Percentage margin of $i^{th}$ middleman:

$$= \frac{P_{Ri} - (P_{pi} + C_{mi})}{P_{Ri}} \times 100$$

where,

$P_{Ri}$  = Sale price of the  $i^{th}$  middlemen.

$P_{pi}$  = Purchase price of the  $i^{th}$  middlemen.

$C_{mi}$  = Marketing cost incurred by  $i^{th}$  middlemen.

### Price-Spread:

The producer's share, marketing costs and margins of different middlemen in the marketing of Bt cotton was worked out for the adopted channels using the formula:

$$P_s = \frac{P_f}{P_c} \times 100$$

where,

$P_s$  = Producer's share in consumer's rupee.

$P_f$  = Price of the produce received by the farmer.

$P_c$  = Price of the produce paid by the consumer.

### Garrett's ranking technique:

Garrett's ranking technique used to analyse the constraints faced by farmers in the production of Bt cotton. The respondents asked to rank the given constraints. The order of merit thus, given by the respondents converted in to ranks using the following formula:

$$\text{Per cent position of the constraint} = 100 (R_{ij} - 0.50) / N_j$$

where,

$R_{ij}$  = Rank given for the  $i^{th}$  constraint by the  $j^{th}$  individual.

$N_j$  = Number of the factors ranked by the  $j^{th}$  individual.

**OBSERVATIONS AND ANALYSIS**

From the study it was revealed that packaging,

transportation, milling charges, cost of labour and selling were the main marketing functions involved in the process of marketing of *Bt* cotton. There were two major

**Table 1: Marketing cost in channel-I and channel-II of Bharuch district**

Sr. No.	Particulars	Channel-I		Channel-II	
		Rs./qn	Per cent of consumer's price	Rs./qn	Per cent of consumer's price
1.	Producer's net price	5516	88.24	5100	83.00
2.	<b>Cost incurred by producer</b>				
	Packing cost	4	0.06	00	00
	Loading and unloading labour charges	8	0.12	00	00
	Transportation cost	22	0.35	00	00
	Total cost	34	0.54	00	00
3.	Producer's sale price/CCI's/ Commission Agent purchase price	5550	88.78	5100	83.00
4.	<b>Cost incurred by CCI</b>				
	Electricity charge	50	0.79	-	-
	Load/unload labour charge and weighing	240	3.83	-	-
	Interests on fixed assets	135	2.15	-	-
	Packing charges	47	0.74	-	-
	Milling charges	155	2.47	-	-
	Go down charges	12	0.19	-	-
	Transportation cost	62	0.99	-	-
	Total cost	701	11.21	-	-
5.	<b>Cost incurred by commission agent</b>				
	Packing charges	-	-	15	0.24
	Loading and unloading labour charges	-	-	52	0.84
	Transportation cost	-	-	78	1.26
	Market charges	-	-	15	0.24
	Weighing charges	-	-	18	0.29
	Total cost	-	-	178	2.89
6.	Commission agent's net margin	-	-	55	0.89
7.	Commission agent sale price/ Ginner purchase price	-	-	5333	86.80
8.	<b>Cost incurred by ginner</b>				
	Electricity charge	-	-	65	1.05
	Load/unload labour charge and weighing	-	-	155	2.52
	Interests on fixed assets	-	-	145	2.36
	Packing charges	-	-	58	0.94
	Milling charges	-	-	188	3.05
	Transport cost	-	-	115	1.87
	Total cost	-	-	726	11.81
9.	Ginner's net margin	-	-	85	1.38
10.	Actual cost borne by CCI	6251	100.00	-	-
11.	Ginner's sale price/Consumer purchase price	-	-	6144	100.00

Source: Field survey

marketing channels patronized for marketing of Bt cotton in the study area.

#### Channel-I:

Producer - CCI (Cotton Corporation of India).

#### Channel-II:

Producer - Commission Agent - Ginner - Consumer.

The data pertaining to marketing costs and margins in channel-I and channel-II in Bharuch district are presented in Table 1. It indicated that in channel-I average marketing cost incurred by producer was Rs. 34 per qn of Bt cotton which was 0.54 per cent of consumer's rupee. Among different cost incurred by producer, transportation cost found highest (0.35%). Marketing cost incurred by CCI was Rs. 701 per qn of Bt cotton which was 11.21 per cent of consumer's rupee. The producer's share in consumer's rupee was 88.24 per cent in channel-I. Whereas, in channel-II average marketing cost incurred by commission agent was Rs. 178 per qn of cotton which was 2.89 per cent of consumer's rupee. Marketing cost incurred by ginner was Rs. 726 per qn of Bt cotton which was 11.81 per cent of consumer's rupee. Among different costs incurred by the commission agent, transportation cost was found the highest (1.26 %). The producer's share in consumer's rupee was 83.00 per cent in channel-II.

The results pertaining to marketing costs and margins

of Bt cotton for Bharuch district are presented in Table 2. It was inferred from the table that total marketing cost was the highest in channel-II (Rs. 904) as compared to channel-I (Rs.735) of Bharuch district, which was 14.71 and 11.75 per cent of consumer's rupee, respectively. The marketing cost born by producer was 0.54 per cent and 0.00 per cent in channel-I and channel-II in Bharuch district, respectively. The marketing cost born by CCI (Cotton Corporation of India) was 11.21 per cent (Rs. 701) in channel-I of Bharuch district. The producer could secure about 88.24 and 83.00 per cent of consumer's rupee in channel-I and channel-II of Bharuch district, respectively. Thus, the channel-I in Bharuch district was found to be more efficient as compared to other channels. The margin earned by the ginner and commission agent were Rs. 85 and Rs. 55 in the channel-II, respectively. These findings were consistent with the results obtained by Shelke *et al.* (2016).

#### Constraints faced by respondents in production of Bt cotton cultivation:

Problems faced by farmers in marketing of Bt cotton crop based on the different attributes were assessed and ranked using Garrett ranking analysis. The problems associated with marketing of Bt cotton revealed that among the eight different production problems faced by the cotton respondents in the study area. The major problems faced by the farmers found that, high incidence

**Table 2: Price spread in channel-I and channel-II of Bharuch district**

Sr. No.	Particulars	Channel-I		Channel-II	
		Rs./qn	Per cent share in consumer's rupee	Rs./qn	Per cent share in consumer's rupee
1.	Producer's net price	5516	88.24	5100	83.00
2.	<b>Cost incurred by</b>				
	Producer	34	0.54	00	00
	CCI	701	11.21	-	-
	Commission Agent	-	-	178	2.89
	Ginner	-	-	726	11.81
	Total	735	11.75	904	14.71
3.	<b>Margin earned by</b>				
	CCI	-	-	-	-
	Commission Agent	-	-	55	0.89
	Ginner	-	-	85	1.38
	Total margin	-	-	140	2.77
4.	Consumer's price	6251	100.00	6144	100.00

Source: Field survey

of disease attack was the main problem expressed with Garrett's score of 80.46 (Rank-I) followed by non-availability of agricultural labour during peak seasons (II), lack of availability of recommended plant protection chemicals (III), high incidence of attack from bollworms (IV), non-availability of quality seeds of *Bt* cotton in time (V), lack of availability and high cost of recommended fertilizers (VI), growth of weeds (VII), lack of irrigation facilities (VII) with a Garrett's score of 79.29, 69.45, 65.55, 53.59, 51.07, 47.56 and 20.00, respectively. Similar production problems were observed by Turkhade (2012); Kumar and Patel (2015) and Gohil *et al.* (2016) in *Bt* cotton cultivation.

### Constraints faced by respondents in marketing of *Bt* cotton cultivation:

Problems faced by farmers in marketing of *Bt* cotton crop based on the different attributes were assessed and ranked using Garrett ranking analysis. The problems associated with marketing of *Bt* cotton revealed that among the eight different marketing problems faced by the cotton respondents in the study area. The major

problems faced by the farmers found that, irregular payment for sale was the main problem expressed with Garrett's score of 78.95 (Rank-I) followed by lack of marketing facilities at village level (II), lack of cheap and efficient transportation facilities (III), long distance of market (IV), lack of storage facilities (V), fluctuation in market prices (VI), lack of co-operative system in village (VII), lack of grading and standardization (VII) with a Garrett's score of 77.61, 73.69, 69.64, 60.16, 54.87, 26.40 and 25.68, respectively. Similar marketing problems were observed by Pavithra and Kunnal (2013) in *Bt* cotton cultivation.

### Conclusion:

The producer could secure about 88.24 and 83.00 per cent of consumer's rupee in channel-I and channel-II of Bharuch district, respectively. Thus, the channel-I in Bharuch district was found to be more efficient as compared to other channels. The major problems faced by the farmers in marketing of *Bt* cotton found that, irregular payment for sale followed by lack of marketing facilities at village level, lack of cheap and efficient

**Table 3: Constraints faced by respondents in production of *Bt* cotton cultivation**

Sr. No.	Constraints	Garretts score	Rank
<b>Production constraints</b>			
1.	High incidence of disease attack	80.46	I
2.	Non-availability of agricultural labour during peak seasons	79.29	II
3.	Lack of availability of recommended plant protection chemicals	69.45	III
4.	High incidence of attack from bollworms	65.55	IV
5.	Non-availability of quality seeds of <i>Bt</i> cotton in time	53.59	V
6.	Lack of availability and high cost of recommended fertilizers	51.07	VI
7.	Growth of weeds	47.56	VII
8.	Lack of irrigation facilities	20.00	VIII

**Table 4: Constraints faced by respondents in marketing of *Bt* cotton cultivation**

Sr. No.	Constraints	Garrett's score	Rank
<b>Marketing constraints</b>			
1.	Irregular payment for sale	78.95	I
2.	Lack of marketing facilities at village level	77.61	II
3.	Lack of cheap and efficient transportation facilities	73.69	III
4.	Long distance of market	69.64	IV
5.	Lack of storage facilities	60.16	V
6.	Fluctuation in market prices	54.87	VI
7.	Lack of co-operative system in village	26.40	VII
8.	Lack of grading and standardization	25.68	VIII

transportation facilities, long distance of market, lack of storage facilities, fluctuation in market prices, lack of co-operative system in village, lack of grading and standardization. The major problems faced by the farmers in production of Bt cotton found that, non-availability of agricultural labour during peak seasons, lack of availability of recommended plant protection chemicals, high incidence of attack from bollworms, non-availability of quality seeds of Bt cotton in time, lack of availability and high cost of recommended fertilizers, growth of weeds, lack of irrigation facilities.

Authors' affiliations :

**J. J. Makadia**, Department of Agricultural Economics, N. M. College of Agriculture, Navsari Agricultural University, Navsari (Gujarat) India

## REFERENCES

**Birla, H.**, Meena, L. K., Lakra, K., Bairwa, S. L. and Beohar, B. (2014). Study on marketing of cotton in Khargone district of Madhya Pradesh, India. *J. Res. Advances Recent Advances in Agriculture*, **2** (6): 244-251.

**Gohil, G. R.**, Raviya, P. B., Parakhiya, A. M. and Kalsariya, B. N. (2016). Constraints faced by cotton growers in crisis management of cotton cultivation in Gujarat. *Internat. J. Agric. Sci.*, **8** (25): 1500-1502.

**Kumar, S.** and Patel, N. R. (2015). Constraints faced by the Bt cotton growers in Bt cotton cultivation. *Plant Archives*, **15**(1): 593-594.

**Pavithra, B. S.** and Kunnal, L. B. (2013). Performance of cotton crop in non-traditional areas of Karnataka. *Karnataka J. Agric. Sci.*, **26** (2): 243-246.

**Rani, P.** and Gupta, S. (2017). Marketing channels, marketing margins, costs and price spreads: A case study of Bathinda district of Punjab. *Internat. J. Management & Social Sciences*, **7** (2) : 294-301.

**Shelke, R. D.**, Jadhav, V. B. and Katkade, J. L. (2016). Marketing cost, margin and price spread of Bt cotton in Beed district of Maharashtra. *Internat. Res. J. Agric. Econ. & Statist.*, **7**(2): 203-207.

**Turkhade, G.** (2012). Study on problems of cotton farmers in Vidarbha region of Maharashtra. *Agric. Update*, **7**(1&2): 27-29.

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