

Original Research Article

AN ANALYSIS OF MARKETING STATUS OF *BT* COTTON SEED IN DEVBHUMI DWARKA DISTRICT

ABSTRACT :

The present study aims to examine “An analysis of marketing status of *Bt* cotton seed in Devbhumi Dwarka district”. The main purpose of the study is to ~~access~~ assess the way companies providing quality seed material to their customers as well as to know market share, marketing channels. As per objective of the study, multistage sampling technique were adopted. Total 120 farmers and 20 dealers were selected from four taluka of Devbhumi Dwarka district of Gujarat state *i.e.*, Bhanvad, Khambhalia, Kalyanpur, Okhamandal (Dwarka). The ~~5~~ five wholesaler/distributors were selected from district place headquarters. The primary data were collected through personal interview with farmers, dealers, wholesaler/distributors using well-structured interview scheduled. ~~The major finding which come out from first objective were the~~ Results revealed that ~~most of *Bt* cotton growers were middle aged.~~ The pattern of land holding distribution shows that majority of *Bt* cotton growers belonged to the small and marginal land holding category. Social participation of *Bt* cotton growers shows that no membership in any organization. The well is main source of irrigation water and most of *Bt* cotton growers reported primary level education. ~~From the study, it was found that second objective it was analysed that highest market share of Rasi seed (P) Ltd. Occupied major market share in Devbhumi Dwarka district. Among different marketing channels, From third objective it was observed that marketing channel-I (MC-I) (Company→ Wholesaler/Distributors→ Dealer→ *Bt* cotton grower) is the most prevalent channel in the sampling area. for *Bt* cotton seed.~~

Keywords: {*Bt* cotton, Marketing status, Market Share, Marketing Channel, Devbhumi Dwarka}

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1. INTRODUCTION

Agriculture is the foundation of national prosperity and strategy of economic development in India is not likely to succeed if it does not focus on rapid growth of agricultural sector. Rapid agricultural growth requires a strategy for raising crop productivity. Cotton is one of the most important commercial crops of India and it plays a dominant role in the industrial and agricultural economy of the country. It is popularly known as the “white gold” and “fiber king”. *Bt* cotton is a genetically modified (GM) engineered cotton. *Bacillus thuringiensis* (*Bt*) is a common soil bacterium. Through genetic engineering, the *Bt* gene ~~can be was~~ inserted into cotton seeds ~~that~~. This gene produces protein which is toxic to lepidopteran (Bollworm) insects, if ingested in adequate quantities. The toxin produced exists in nature within the microorganism *Bacillus thuringiensis* (*Bt*). Genetic manipulation of cotton has been carried out by inserting gene – CRY-IAC – obtained from the bacterium. The natural gene – CRY-IAC – when ingested by the larva of the targeted moth like bollworms, attacks on the inner lining of its alkaline digestive system and worms become lethargic and are gradually eliminated. In India during 2020-21, production of cotton was 371.00 lakh bales cultivated under an area of 129.57 lakh hectares with a productivity of 487 kg per hectare (Cotton Corporation of India). According to 3rd advance estimates 2020-21, cotton cultivation in Gujarat was 22.51 lakh hectares cultivated under area with a productivity of 671.95 kg per hectare. ~~Latest data on area and productivity can be presented here.~~ In India, there are nine major cotton growing states which fall under three zones viz. the North Zone (Punjab, Haryana and Rajasthan), the Central Zone (Maharashtra, Madhya Pradesh and Gujarat), and the Southern Zone (Andhra Pradesh, Karnataka and Tamil Nadu). Nearly 65 per cent of the cotton crop is cultivated under rainfed conditions in the country. Nearly 2/3rd of the cotton production in India comes from the states of Maharashtra, Gujarat, Andhra Pradesh, and Telangana collectively known as Cotton Basket of India.

In view of the importance of the crop, a study was conducted to assess the market status of *Bt* cotton seed in Devbhumi Dwaraka district

2. MATERIAL AND METHODS

By using multistage sampling technique, four talukas were selected from Devbhumi Dwarka district ~~what is the criteria of selection of four talukas???~~. ~~Out of four talukas, three villages were selected from each. Three villages from each taluka were selected based on~~ Total thirty farmers were selected ~~ed~~ from three villages. Dealers were selected ~~ed~~ from the taluka place only. The wholesaler/distributor were selected at a district level. A random sampling procedure was followed for the selection of the respondents and accordingly 30 *Bt* cotton growers were selected from three selected villages. ~~The dealers were selected at a taluka centre place. Wholesaler/distributors were selected at district level.~~ From each selected taluka, 30 farmers and 5 dealers were selected. So, the total ~~sample size is number of farmers were 120 farmers, and total number of dealers also 20 dealers – and number of wholesalers/ distributors were 5~~ Wholesalers / Distributors. Analytical tools like ~~Simple tabular method, Frequency and -Percentage methods~~ was were used for research study.

3. RESULTS AND DISCUSSION

3.1 Socio-economic characteristics of the *Bt* cotton growers

Socio-economic characteristics of the respondents namely age, education, size of land holding, irrigation sources and social participation were studied. The result of each variable characteristic is depicted in subsequent tables.

The data collected from the *Bt* cotton growers in this regard are presented in Table 1. The *Bt* cotton growers are categorized into three groups based on their age. Majority of the

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~~respondents~~ Highest 47.50 per cent of ~~Bt cotton growers~~ belonged to middle age followed by young age (30.00%) and old age (22.50%).

Table 1: Distribution of *Bt* cotton growers according to their age (n=120)

Sr. No.	Age	Frequency	Percentage
1.	Young (20 to 30 years)	36	30.00
2.	Middle (31 to 45 years)	57	47.50
3.	Old (More than 45 years)	27	22.50
Total		120	100.00

Table 2 showed that 30.83 per cent *Bt* cotton growers were founded to have reported primary level education and followed by 22.50 per cent ~~having~~ illiterate followed by 21.67 per cent studied up to secondary level whereas, 19.17 per cent *Bt* cotton growers ~~were~~ studied up to HSC level and only 05.83 per cent *Bt* cotton growers have studied up to UG/PG level. This may be due to the fact that in the study area there are only institutes which catering primary and secondary level education. The higher educational institutes are located at far distance.

Table 2: Distribution of *Bt* cotton growers according to their education level (n=120)

Sr. No.	Educational status	Frequency	Percentage
1.	Illiterate	27	22.50
2.	Primary level	37	30.83
3.	Secondary level	26	21.67
4.	Higher secondary level	23	19.17
5.	Graduation/ Post Graduation	07	05.83
Total		120	100.00

The area of land possessed by the *Bt* cotton growers are presented in the Table 3. The *Bt* cotton growers are categorized into five groups based on their land holding. ~~Majority~~ Highest 39.17 per cent of *Bt* cotton growers belonged to small land holding category followed by marginal land holding category (22.50%), semi medium land holding category (21.66%), medium land holding category (12.50%) and only few of them belonged to large land holding category (04.17%). This pattern of land holding distribution showed that majority of *Bt* cotton growers belonged to the small and marginal landholding categories.

Table 3: Distribution of *Bt* cotton growers according to their land holding (n=120)

Sr. No.	Land holding size	Frequency	Percentage
1.	Marginal (up to 1.00 hectare)	27	22.50
2.	Small (1.01 to 2.00 hectares)	47	39.17
3.	Semi medium (2.01 to 4.00 hectares)	26	21.66
4.	Medium (4.01 to 10.00 hectares)	15	12.50
5.	Large (more than 10 hectares)	05	04.17
Total		120	100.00

~~In this regard~~ Table 4 showed that the main source of irrigation water for the *Bt* cotton growers was well i.e., 49.17 per cent. Whereas another important irrigation source available with *Bt* cotton growers was tube well i.e., 40.83 per cent followed by river (04.67%) and Canal (01.67%).

Table 4: Distribution of *Bt* cotton growers according to their irrigation facilities (n=120)

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Sr. No.	Sources of Irrigation	Frequency	Percentage
1.	Tube well	49	40.83
2.	Canal	02	01.67
3.	Well	59	49.17
4.	River	10	08.33
Total		120	100.00

The *Bt* cotton growers are ~~were~~ categorized into four groups based on their social participation. ~~Highest Majority (61.67 % per cent)~~ of *Bt* cotton growers ~~were have~~ no membership in any organization followed by membership in one organization (29.17%), membership in more than one organization (06.66%) and holding position (02.50%).

Table 5: Distribution of *Bt* cotton growers according to their social participation (n=120)

Sr. No.	Social participation	Frequency	Percentage
1.	No membership	74	61.67
2.	Membership in one organization	35	29.17
3.	Membership in more than one organization	08	06.66
4.	Holding position	03	02.50
Total		120	100.00

3.2 Market share of *Bt* cotton seed

3.2.1 Distribution of dealers according to various *Bt* cotton seeds companies based on availability

The data regarding *Bt* cotton seed availability in dealers' shop are presented in Table 6 reveals that 100 per cent dealers sold Rasi Seed (P) Ltd. *Bt* cotton seed followed – by Ajeet Seeds private Ltd. (80.00%), Western Agri Seeds Ltd. (70.00%), Akshay Seed Tech. (65.00%), Kaveri Seed company Ltd. (55.00%), Ankur Seeds Pvt. Ltd. (45.00%) and Sainath Seed corporation (45.00%).

Table 6: Distribution of dealers according to various companies *Bt* cotton seed availability (n=20)

Sr. No.	Name of Company	Frequency	Percentage
1.	Rasi Seed (P) Ltd.	20	100.00
2.	Western Agri Seeds Ltd.	14	70.00
3.	Ajeet Seeds Private Ltd. (ASPL)	16	80.00
4.	Nuziveedu Seed Ltd.	10	50.00
5.	Akshay Seed Tech.	13	65.00
6.	Kaveri Seed company Ltd.	11	55.00
7.	Ankur Seeds Pvt. Ltd.	09	45.00
8.	Sainath Seed corporation	09	45.00

3.2.2 Major companies preferred by the farmers while purchasing *Bt* cotton seeds

The data presented in Table 7 show that 23.33 per cent farmers used Rasi Seed (P) Ltd. *Bt* cotton seed while 15.84 per cent farmers used Western Agri Seeds Ltd. On the other hand, 15.00 per cent farmers used Ajeet Seeds private Ltd. (ASPL). while 12.50 per cent, 10.00

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per cent, 09.17 per cent, 08.33 per cent and 05.83 per cent farmers used Nuziveedu Seed Ltd., Akshay Seed Tech., Kaveri Seed company Ltd., Ankur Seeds Pvt. Ltd. And Sainath Seed corporation *Bt* cotton Seed respectively. ~~Majority Maximum~~ farmers (23.33%) preferred used the *Bt* cotton Seeds sold Rasi Seed (P) Ltd.

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Table 7: Major companies preferred by farmers (n=120)

Sr. No.	Name of Company	Frequency	Percentage
1.	Rasi Seed (P) Ltd.	28	23.33
2.	Western Agri Seeds Ltd.	19	15.84
3.	Ajeet Seeds private Ltd. (ASPL)	18	15.00
4.	Nuziveedu Seed Ltd.	15	12.50
5.	Akshay Seed Tech.	12	10.00
6.	Kaveri Seed company Ltd.	11	09.17
7.	Ankur Seeds Pvt. Ltd.	10	08.33
8.	Sainath Seed corporation	07	05.83
Total		120	100.00

3.3 Marketing channels of *Bt* cotton seed

In general, marketing channels are routes through which agricultural products move from buyers to sellers. Marketing channels for various agricultural inputs and outputs vary from product to product, country to country, lot to lot and time to time. Therefore, this study conceptualized the prevalent marketing channels for *Bt* cotton seeds in the study area.

The following marketing channels were identified in the study area result:

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- **MC-I:** *Bt* cotton grower – Dealer - Wholesaler/Distributor - Company
- **MC-II:** *Bt* cotton grower – Dealer - Company
- **MC-III:** *Bt* cotton grower - Wholesaler/Distributor - Company
- **MC-IV:** *Bt* cotton grower - Co-operative society - Wholesaler/Distributor - Company
- **MC-V:** *Bt* cotton grower - Company

Table 8: Distribution of *Bt* cotton growers according to marketing channels (n=120)

Sr. No.	Marketing Channel	Frequency	Percentage
1.	<i>Bt</i> cotton grower - Dealer - Wholesaler/Distributor- Company	65	54.17
2.	<i>Bt</i> cotton grower-Dealer-Company	07	05.83
3.	<i>Bt</i> cotton grower -Wholesaler/Distributor- Company	19	15.83
4.	<i>Bt</i> cotton grower- Co-operative society- Wholesaler/Distributor- Company	24	20.00
5.	<i>Bt</i> cotton grower- Company	05	04.17
Total		120	100.00

The result of study revealed that Marketing Channel-I (MC-I) (54.17%) was most prominent channel prevalent in the study area for purchasing the *Bt* cotton seeds by *Bt*

cotton growers followed by MC-IV (20%), MC-III (15.83%), MC-II (05.83%) and MC-V (04.17%) channels.

4. CONCLUSION – WRITE IN BRIEF

The pattern of land holding distribution shows that majority *Bt* cotton growers belong to the Small and marginal land holding category. Social participation of *Bt* cotton grower shows that no membership in any organization and membership in one organization. The well is main source of irrigation water for i.e., 49.17 per cent. Whereas another important irrigation source available with *Bt* cotton growers was tube well i.e., 40.83 per cent. The finding of the study point out that 30.83 per cent *Bt* cotton growers reported primary level educated.

The result of the study reveals that the all dealers were involved selling of Rasi seed (P) Ltd. *Bt* cotton seed followed by Ajeet seeds private Ltd. (80.00%), Western Agri seeds Ltd. (70.00%), Akshay seed Tech. (65.00%), Kaveri seed company Ltd. (55.00%), Ankur seeds Pvt. Ltd. (45.00%) and Sainath seed corporation (45.00%). Maximum *Bt* cotton growers (23.33%) used Rasi seed (P) Ltd.

The result of the study reveals that Marketing channel-I (MC-I) (Company-Wholesaler/Distributors-Dealer-*Bt* cotton grower) was most prominent channel for purchasing the *Bt* cotton seed by *Bt* cotton growers. The result of the study interpreted that 60.00 per cent *Bt* cotton growers purchased *Bt* cotton seed from dealer's shop. The highest proportion of *Bt* cotton growers were purchased the *Bt* cotton seed from dealer's shop may be because of easily availability of *Bt* cotton seed in the proximity and may be credit given by dealers. The result indicates that the dealers were majorly purchased (45.00%) *Bt* cotton seed from Wholesaler/Distributor. In remaining cases purchases were made from company (35.00%) and company and wholesaler/distributor (20.00%). The result interpreted that all wholesaler/Distributor are purchased *Bt* cotton seed from the seed company directly.

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