

Original Research Article

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

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ABSTRACT :

The present study aims to examine "An analysis of the marketing status of *Bt* cotton seed in Devbhumi Dwarka district". The main purpose/objectives of the study is/were to access the way companies' providing distribution pattern of quality seed material, to their customers as well as to know their market share, as well as the marketing channels. As per objective of the study, multi-stage sampling technique were adopted. The total 120 farmer, 20 dealers were selected from four taluka of Devbhumi Dwarka district of Gujarat state i.e., Bhanvad, Khambhalia, Kalyanpur, Okhamandal (Dwarka). of Devbhumi Dwarka district of Gujarat state. The 5 wholesaler/distributors were selected from district place. The primary data were collected through personal interview with farmers, dealers, wholesaler/distributors using well-structured questionnaires and interview scheduled. The major finding which come out from first objective were reported the most of *Bt* cotton growers were to be middle aged farmers. The pattern of land holdings distribution shows that majority of the *Bt* cotton growers belong to the small and marginal land holding category. Social participation of *Bt* cotton grower shows that no they are not membership in of any organization. The well was found to be is the main source of irrigation water and most of *Bt* cotton growers were reported to have attained primary level of education. From second objective it was analysed that highest market share of Further more, Rasi seed (P) Ltd was found to have the highest market share in Devbhumi Dwarka district. From third objective it was observed that Conclusively, the marketing channel-I (MC-I) (Company → Wholesaler/Distributors → Dealer → *Bt* cotton grower) was observed to be the is most prevalent channel for *Bt* cotton seed in the study area.

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

1. INTRODUCTION

Agriculture is the foundation of national prosperity and strategy of economic development in India. And 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 inserted into cotton seeds. 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.

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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. 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.

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2. MATERIAL AND METHODS

~~By using m~~Multistage sampling technique was used for the study. ~~Four talukas~~ were selected from Devbhumi Dwarka district. ~~Out of four talukas~~ And three villages were selected from each ~~talukas~~. ~~The total of thirty farmers~~ were select from ~~the~~ three villages. Dealers were select from the taluka place only. The wholesaler/distributor were selected at a district level. A random sampling procedure was ~~followed for~~ adopted in 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 number of farmers were 120 and total number of dealers also 20 and number of wholesalers/ distributors were 5. Descriptive statistics was used in the data analysis. ~~Analytical~~ Tools like Simple tabular method, Percentage method was used for ~~the~~ research study.

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3. RESULTS AND DISCUSSION

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

~~The~~ Socio-economic characteristics of the respondents namely: age, education, size of land holding, irrigation sources and social participation were captured and studied. ~~The result of each 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 ~~arewere~~ categorized into three groups based on their age. ~~Highest~~ More than

(47.50%) per cent of the *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

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Table 2 showed that 30.83% per cent of the *Bt* cotton growers attended were founded to have reported primary level education, and followed by 22.50% per cent having were found to be illiterate followed by and 21.67% per cent studied up to had attended secondary level, whereas, in addition, 19.17% per cent of the *Bt* cotton growers were studied up to HSC level and only 05.83% per cent of the *Bt* cotton growers have studies had studied up to UG/PG level. This may be due to the fact that in the study area, primary and secondary education were easily accessible, there are only institutes which catering primary and secondary level education. Whereas 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 holdings. The Highest was (39.17%) per cent of *Bt* cotton growers that belonged to the small land holding category, followed by The marginal land holding category was found to be (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 presents the source of irrigation water. Depicting showed that the main source of irrigation water for the *Bt* cotton growers was to be well i.e., (49.17%) of the respondents 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)

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 categorized into four groups based on their social participation in Table 5. Highest More than -61.67 per cent of *Bt* cotton growers were no membership in of 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. This revealeds 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

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. ~~Maximum-~~ The result showed that most farmers (23.33%) 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 input and output vary from product to product, country to country, lot to lot and time to time. Table 8 presents the marketing channels of *Bt* cotton in the study area. Therefore, ~~this study conceptualized the prevalent marketing channels for the *Bt* cotton -seeds identified in the study area.~~ were presented as follows:

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~~The following marketing channels were identified in result:~~

- **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 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

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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