



## **Market status and performance analysis of *Bt* cotton seed brands in Nanded district of Maharashtra**

K. P. KULKARNI\*, SARMAN LAL CHAUDHARY, SUVARNA S. PATIL AND SEEMA

*School of Agribusiness Management, PJTSAU, Hyderabad-500030*

*\*E-mail : [krashna.pk@gmail.com](mailto:krashna.pk@gmail.com)*

**ABSTRACT** : Availability of seeds in the right place at the right time is the most challenging task in marketing of seeds in agriculture sector. With existence of various *Bt* cotton seed brands, the market competition among seed companies remains high. Present study was conducted in Nanded district of Maharashtra to collect data. Total of 16 dealers, 8 retailers and 120 farmers were selected. Study was focused on the availability of different *Bt* cotton seed brands, market share, promotional measures and marketing performance of *Bt* cotton seed brands in study area. Data obtained were analysed using Garrett Ranking Technique. It was observed that Mallika, MRC-7351 and Jadoo brands have the highest market share. Field demonstration, farmers meeting and follow up visits by company representatives to the farmer's field were found to be important promotional measures which signified that individual and collective marketing promotion tools were effective in implementing promotional measures. For all the brands, performance parameter such as yield ranked 1<sup>st</sup> and quality of seed ranked 2<sup>nd</sup> as most important parameters among all the brands except for Brahma brand, for which resistance to pests and diseases was ranked as 2<sup>nd</sup> performing parameter. Thus, present study analysed the field status, market share, marketing promotion tools and performance of various *Bt* cotton seed brands so that more focussed marketing approach could be identified by the companies.

**Key words** : *Bt* cotton seed brands, marketing performance, market share, promotional measures.

India remains to be one of the largest cotton producing countries accounting for about 26 per cent of the world cotton production. Year by year cotton bed on Indian agriculture land is growing steadily in terms of area, production and productivity which in turn have increased the demand of cotton seed. Indian agriculture is continuously evolving and striving hard to remain responsive to manage the change and to meet the growing and diversified needs of different stakeholders in the entire production to consumption chain. Timely and adequate supply of quality seed to farmers is not to be

neglected because non-availability of required quality and quantity of seed during sowing season along with the vagaries of monsoon could make agricultural production more vulnerable particularly with a resource poor farmers.

The global seeds market reached a value of US\$ 66.9 billion in 2018, exhibiting a CAGR of 7 percent and the Indian seeds market reached a value of US\$ 4.1 billion exhibiting a CAGR of 15.7 percent during 2011-2018 (IMARC Group Report, 2019). India is expected to become third largest seed market in the world because of the growing food demand. The private sector has

started to play a significant role in the seed industry over the last few years mainly in the case of hybrid seed for rice, maize, sunflower and cotton seeds. According to status report, India is at the top with contribution of 33.23 per cent in total area of cotton in the world. China is at 2<sup>nd</sup> position by contributing 16.02 per cent of the world cotton acreage (Anonymous, 2017).

According to the report, the Indian seeds market reached a value of US\$ 3.6 billion in 2017, exhibiting a CAGR of around 17 per cent during 2010-2017. Owing to the below factors, the Indian seeds market is further expected to grow at a CAGR of 14.3 per cent during 2018-2023, reaching a value of more than US\$ 8 billion by 2023. (IMARC Group Report, 2018)

Maharashtra is the largest cotton growing state followed by Gujarat in the country having 41.19 lakh hectare and 27.09 lakh hectare area which accounts to 33.65 per cent and 22.13 per cent of the total area, respectively under cotton crop in the country. However, in production Maharashtra ranks second after Gujarat with production of 81.00 lakh bales with an average productivity of 334kg/ha in 2018-19. Productivity of cotton is lowest in Maharashtra as compared to all other state growing cotton crop in the

country. (AICRPC Annual Report 2018-19)

#### SCOPE AND OBJECTIVES:

1. To study availability of different *Bt* cotton seed brands in study area.
2. To study market share of major cotton seed brands in the selected markets.
3. To study frequency of promotional measures adopted by cotton seed companies.
4. To study performance of the various brands of *Bt* cotton seed.

#### MATERIALS AND METHODS

This study was carried out in Nanded District of Maharashtra State which is one of the highest producers of cotton crop in terms of area. Out of 16 tehsils in Nanded District, four major cotton growing tehsils *i.e. i.e.* Bhokar, Himayatnagar, Kinwat and Mahur were randomly selected for this study. These four tehsil's market places were selected as major markets to collect information on marketing aspect. Among all the dealers present in selected markets, it was proposed to select 4 dealers and 2 retailers randomly from each tehsil. Hence, a

**Table 1.** Simple size of different variables under study

Sr. No.	Name of Tehsils	Villages	Sample farmers	Sample dealers	Sample retailers
1	Bhokar	a) Kini b) Devathana	15 15	4	2
2	Himayatnagar	a) Khadki b)Gharapur	15 15	4	2
3	Kinwat	a)Benditanda b)Ghoti	15 15	4	2
4	Mahur	a)Wai b)Tandala	15 15	4	2
<b>Total</b>		<b>120</b>	<b>16</b>	<b>8</b>	

total of 16 dealers and 8 retailers were selected to elicit information required for the study.

Based on the criterion of highest area under cotton crop, two villages from each tehsil *i.e.* total 8 villages were selected and 15 sample respondents *i.e.* farmers who were growing cotton crop from each village purposely selected to study performance of brand. A total of 120 sample farmers formed the basis for the study.

Due to limitations of time to the researcher, only the major companies and their major brands were selected by taking the advice of dealers and farmers in the study area.

Garrett Ranking Technique was used to evaluate the performance of brands. In this method, the farmers or dealers were asked to give rank to the given factors according to the magnitude of its importance. The orders of merit given by the respondents were converted into ranks by using the following formula.

$$\text{Per cent position} = 100 (R_{ij} - 0.5) / N_j$$

Where,

$R_{ij}$ : rank given for the  $i^{\text{th}}$  factor ( $i = 1, 2, \dots, 7$ ) by the  $j^{\text{th}}$  individual ( $j = 1, 2, \dots, 36$ )

$N_j$ : number of factors ranked by  $j^{\text{th}}$

individual

The per cent position of each rank thus obtained was converted into scores by referring to the table given by Henry Garrett. Then for each factor the scores of individual responses were added together and divided by the total number of respondents for whom the scores were added. Then mean scores for all the factors were arranged in the order of their ranks and inferences drawn. A three point ranking scales was used to depict the severity of problem as high, medium, and low with scores 1, 2 and 3 respectively.

In the case of promotional measures, importance attached to each measure was ranked as 1, 2 and 3 as very important, moderately important, and less important respectively.

For evaluating the performance of brand, five point ranking scale was used indicating

- 1-Strongly satisfactory,
- 2-Satisfactory,
- 3-Average,
- 4-Poor satisfactory,
- 5- Dissatisfactory

**Table 2.** Market share of popular brands of cotton seed in selected market area for year 2013-2014

Sr. No.	Name of the company	Name of brand	Total sale of brand (Kg)	Market share (%) to the total sales
1	Mahyco seeds	MRC-7351	14307.74	15.43
		Dr.Brent	6561	7.08
2	NuziveeduSeeds	Mallika	16010.99	17.27
		Bunny	5526	5.96
3	Ajeet seeds	Ajeet- 155	10322.99	11.13
4	Kaveri seeds	Jadoo	12237.74	13.20
5	Monsanto seeds	Brahma	10443.37	11.26
6	Ankur seeds	Jai-bt	8170.86	8.81
7	Other	Other brands	9144	9.86
<b>Total sales</b>		<b>92724.69</b>	<b>100</b>	

(Market share is percentage to the total sales in study area)

Performance analysis was carried out by studying the availability of various *Bt*- cotton seed brands, market share of major seed brands and the promotional measure adopted by respective companies in selling their products.

## RESULTS AND DISCUSSION

**1. Availability of different *Bt* cotton seed brands in study area :** A number of national and multi-national firms which were involved in production of high quality seed with latest technologies. Farmers had wide range of varieties available with different traits. While studying the market status, different promotional activities by seed companies and performance of various cotton seed brands, it was felt necessary to first study the different cotton seed brands available to the farmer in selected study area with their characteristics.

It was observed that there were thirteen major companies involved in the cotton seed marketing with about forty major brands stretching with wide range of varieties in the study area.

Among all the brands available, six brands which were top most were selected for the study. Brands selected were Mahyco Seeds-MRC-7351, Monsanto Seeds- Brahma, Nuziveedu Seeds-Mallika, Kaveri Seeds- Jadoo, Ankur Seeds- Jai *Bt* and Ajeet Seeds- Ajeet-155.

**2. Market share of major cotton seed brands in the selected markets :** To know the share of each brand in study area, actual sales figures of each brand were collected from each market place under study and then added together to know total sales of cotton seed in study

area. all the dealers in the study area were interviewed about share of some of the popular brands in their total sales for the period 2013-2014.

As shown in Table 2, total sales of *Bt* cotton seed was 92724.69 kg. Mallika brand of Nuziveedu Company having highest market share of 17.27 per cent in study area due to its distinctive characteristics such as higher yield, quality of seed, resistance to pests and diseases, tolerance to adverse climatic conditions such as high temperature drought etc and quantity of other inputs required while cultivation. The brand MRC-7351 of Mahyco seeds accounted to 15.43 per cent share and hold second position in market due to its specific characteristics of tolerance to adverse climatic conditions such as high temperature drought etc. Jadoo brand of Kaveri Seeds having sales of 12237.74kgs (13.20%) in total sales scored at 3rd rank in the market. Two brands namely Brahma of Monsanto seeds and Ajeet-155 of Ajeet seeds had share of 11.26 per cent and 11.13 per cent, respectively and they were closely competing to capture the market share. Brands like Jai-*bt*, Dr.Brent and Bunny had 8170.86 kg, 6561 kg and 5526 kg sales in total sale of *Bt* cotton seed brand in selected market which accounts share of 8.81 per cent, 7.08 per cent and 5.96 per cent respectively. All the other brands together hold sales of 9144 kg of *Bt* cotton seed which accounted for 9.86 per cent of market share in selected markets for study.

From Table 2 it was revealed that few selected brands were capturing equal share whereas rest of the brands were competing well to increase the market share in the selected markets.

**Table 3.** Frequency of promotional measures conducted by major cotton seed companies (2013-2014)

Sr.No.	Promotional measure	Seed Frequency of promotion measures conducted by different companies					
		Mahyco	Nuziveedu	Kaveri	Ankur	Ajeet	Monsanto
1	Field demonstration	24	10	8	28	40	20
2	Campaign	5	6	4	8	10	8
3	Posters	6000	3800	4200	20000	6000	8000
4	Wall painting	-	-	-	-	-	-
5	Calendars/Dairies	1000	-	2000	-	20000	-
6	Distributing of literature	10000	25000	15000	40000	20000	20000
7	Farmer visit to research plots	10	-	-	40	40	30
8	Field day	8	18	6	40	20	25
9	Farmers meeting	40	18	20	45	80	20
10	Live telecast	-	-	-	-	-	-
11	Banners	100	60	40	200	150	50
12	Follow up visits by company representatives	16	12	10	20	40	20
13	Slide shows	-	-	-	-	-	-
14	Live sample shown in dealers counter	-	-	12	18	16	-
15	Exhibition	5	5	5	6	6	6
16	Grower and crop photos shown in dealer counter	-	-	12	18	16	-
17	Magazines	12	-	-	4	-	12

### 3. Promotional measures adopted by cotton seed companies in study area :

Promotional measures are adopted by companies to increase the sale in market. It was pertinent for the company to reach every farmer to increase the awareness about the company's brand and its products. The table 3 gives information about the frequency of promotional measures adopted by major cotton seed companies during 2013-2014.

It has observed that all the companies nearly adopted all promotional activities to stand in competition and to disseminate information. Ajeets Seeds conducted more number of field demonstrations followed by Ankur Seeds. With regard to campaigning and posters, Ankur Seeds took lead followed by Monsanto. In the case of distribution of literature, Ankur Seeds ranked

first followed by Nuziveedu Seeds and Ajeet Seeds. In conducting the field day, Ankur Seeds conducted more field days followed by Nuziveedu Seeds. Wherein organizing the farmer's meetings, Ajeet Seeds ranked first followed by Mahyco and Ankur.

Banners and hoardings along road side were prominently done by Ankur followed by Ajeet and Mahyco. In the case of follow up visits by the company's representative to farmer's fields, Kaveri Seeds ranked first followed by Nuziveedu Seeds and Monsanto. The promotional activity like live samples and crop photos at the dealer's counter were conducted only by Kaveri, Ankur and Ajeet Seeds. In case of measures such as exhibition, all the companies equally participated in exhibition activity in the study area. Measures such as wall painting, live

telecast and slide shows were not adopted by the companies in the study area. In the case of publishing the magazines yearly or quarterly Mahyco Seeds, Ankur Seeds and Monsanto had their own publications on regular basis.

From the above analysis it is inferred that various companies were good at conducting different promotional activities in the study area. Different kinds of promotional activities by different companies on one side helps company to increase their sale and on other side it helps to communicate the specific traits of particular brands, its suitability to study area coupled with update on modern cultivation practices to the farmers, which help to increase their knowledge about crop cultivation and ultimately income of farmer.

**4. Performance of the various brands of *Bt* cotton seed** : To evaluate the performance of popular brands of *Bt* cotton seeds in the study area, Garrett Ranking Technique was used. Performance parameters were identified after interviewing the farmers, dealers and company persons. The selected farmers were asked to give rank between 1 to 5 to the important parameters for each brand individually.

From Table 3 it was observed that, for all the brands, performance parameter such as yield was considered as most important parameter among all, with mean score of 78.90, 79.06, 78.50, 77.80, 77.53 and 76.70 respectively by the selected farmers. Quality of seed parameter is ranked 2<sup>nd</sup> for all the brands except for Brahma brand, for which resistance to pests & diseases were ranked as 2<sup>nd</sup> performing parameter. Mallika, Ajeet-155, Jadoo and Jai *Bt* brands was ranked at 3<sup>rd</sup> position to perform well

for resistance to pests & diseases by selected farmers whereas tolerance to adverse climatic conditions for MRC-7351 brand and quality of seed in case of Brahma brand ranked in 3<sup>rd</sup> position.

In medium important category 4<sup>th</sup> position given by the selected farmers to parameter such as quantity of other inputs required for crop production particularly for the brands Mallika, Ajeet-155 and Brahma. Whereas, Jadoo and Jai-*Bt* brands is ranked 4<sup>th</sup> to parameter adaptability to the area and resistance to pests and diseases in case of the MRC-7351 brand. Farmers had given 5<sup>th</sup> rank to parameter quantity of other inputs required for crop production in case of the brands MRC-7351, Jadoo and Jai-*Bt*. For brands, Ajeet-155 and Brahma 5<sup>th</sup> rank given to adaptability to the area. Parameter like tolerance to adverse climatic conditions for the Mallika brand ranked by farmer at 5<sup>th</sup> rank.

From study it was analysed that most of the brand under study were performed well in parameters like yield, resistance to pests and diseases, quality of seed and tolerance to adverse climatic conditions. For performance parameters such as the quality of output and quality of by-product were not performed in case of most of the brands.

## CONCLUSION

From the study it was observed that there were thirteen major companies involved in the cotton seed marketing with about forty popular brands making wide range of varieties available in the selected study area. In all the markets Mallika followed by MRC-7351 brands had highest market share. Jadoo brand stood at 3<sup>rd</sup>

**Table 3.** Performance of the various brands of *Bt* cotton seed in study area

S. No.	Performance Parameters	Selected Brands											
		MRC-7351		Mallika brand		Ajeet-155		Jadoo		Brahma		Jai-Bt	
		Mean score	Garrett rank	Mean score	Garrett rank	Mean score	Garrett rank	Mean score	Garrett rank	Mean score	Garrett rank	Mean score	Garrett rank
1	Yield	78.90	I	79.06	I	78.50	I	77.80	I	77.53	I	76.70	I
2	Quality of seed	77.13	II	78.08	II	76.58	II	75.40	II	76.10	III	75.40	II
3	Quality of output	71.32	VII	71.32	VII	71.32	VII	71.32	VII	71.32	VII	71.32	VI
4	Resistance to pests and diseases	75.45	IV	75.45	III	74.45	III	73.85	III	76.90	II	73.35	III
5	Quantity of other inputs required for crop production	75.25	V	75.20	IV	73.88	IV	73.25	V	76.20	IV	72.35	V
6	Adaptability to the area	73.32	VI	73.32	VI	73.06	V	73.32	IV	73.32	V	73.32	IV
7	Tolerance to adverse climatic conditions such as high temperature, drought etc	76.00	III	74.50	V	72.42	VI	71.45	VI	71.5	VI	70.68	VII
8	Quality of the by product	67.32	VIII	67.32	VIII	66.50	VIII	65.41	VIII	66.58	VIII	66.83	VIII

position in capturing the market share.

All the companies nearly adopted all promotional activities to withstand in the competition and to disseminate information to the farmers. The analysis showed that Ajeet Seeds conducted more number of field demonstrations whereas campaigning and posters were predominant with Ankur Seeds. In the case of distribution of literature, Ankur Seeds ranks first followed by Nuziveedu Seeds and Ajeet Seeds. While conducting field day Ankur Seeds conducted more field days followed by Nuziveedu Seeds. Ajeet Seeds ranked first followed by Mahyco and Ankur in arranging farmer's meeting.

In the case of all the brands, yield and quality of seed were ranked the 1<sup>st</sup> and 2<sup>nd</sup> most important performance parameters except for Brahma brand, for which resistance to pest and disease were ranked as the most important parameters. In the case of almost all the brands quality of by-product was considered as least important parameter and ranked at 8<sup>th</sup> position by the selected farmers.

## REFERENCES

- Anonymous 2018-2019.** "Annual Report" All India Coordinated Research Project on Cotton.
- Bharat Ramaswami; Milind Murugkar; Mahesh Shelar, 2009.** Product proliferation in India's cotton seed market: are there too many varieties?, *JAFIO* **7** : 2.
- Hemambara, H. S.; Kumar, K. S. A. 2012.** Marketing problems in cotton seeds: a study in north Karnataka, *Mysore J. Agric. Sci.* **46** :140-45.
- IMARC Group Report 2018.** "Seed Industry in India: Market Trends, Structure, Growth, Key Players and Forecast 2018-2023", February 2018, Report ID: 4514515, IMARC Group.
- IMARC Group Report 2019:** "Seeds Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2019-2024", June 2019, Report ID: 4775577, IMARC Group.
- Khalache, P.G., Tale, N.N and Tayade, R.V. 2012.** Study of knowledge level and relationship between socio-economic profile and situational attributes of the cotton growers. *Adv. Res. J. Soc. Sci.* **3** : 22-25.
- Manjunatha, B.L., Rao, D.U.M and Dastagiri, M. B. 2013.** Trends in seed production, growth drivers and present market status of Indian seed industry: An analytical study. *I.J.A.Re.* 83.
- Murugkar M., Ramaswami, B. and Shelar, M. 2007.** Competition and monopoly in Indian cotton seed market. *EPWs.* **42** : 3781-89.
- NSAI Country Report. 2012.** Indian Seed Industry. National Seed Association of India. New Delhi. March 01, 2012.
- Sivakumar, S. D., Ajjan, N., Sivakumar, K., Kumar, N. 2006.** Brand preference and expectation of farmers with regard to cotton seeds, *Agri. Marketing.* **48** : 53-57.
- Websites: Current Cotton Scenario, <http://cotcorp.gov.in/current-cotton>
- National Cotton Scenario, <http://cotcorp.gov.in/national-cotton>

---

**Received for publication : August 3, 2019**

**Accepted for publication : October 23, 2019**