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PA Dahikar
MBA ABM Student, School of
Agri-Business Management,
Nagpur, Maharashtra, India

AS Tingre
Professor, Section of
Agricultural Economics and
Statistics, College of
Agriculture, Nagpur,
Maharashtra, India

SV Warade
Professor (CAS), School of
Agri-Business Management,
Nagpur, Maharashtra, India

MS More
Assistant Professor, Section of
Agricultural Economics and
Statistics, College of
Agriculture, Nagpur,
Maharashtra, India

Corresponding Author:
PA Dahikar
MBA ABM Student, School of
Agri-Business Management,
Nagpur, Maharashtra, India

Market share analysis and farmers' perception of BPG-100 (BGMH-9101) maize hybrid of booster plant genetics Pvt. Ltd. in Nagpur district

PA Dahikar, AS Tingre, SV Warade and MS More

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Abstract

The present investigation, entitled "Market Share Analysis and Farmers' Perception of BPG-100 (BGMH-9101) Maize Hybrid of Booster Plant Genetics Pvt. Ltd. in Nagpur District," was undertaken during 2025-26 to determine the market share of the BPG-100 (BGMH-9101) maize hybrid and evaluate farmers' perceptions of its performance. The study was conducted in Kuhi and Umred talukas of Nagpur district, Maharashtra, involving fifty randomly selected maize-growing farmers interviewed using a structured schedule. Secondary information regarding maize seed sales of Booster Plant Genetics Pvt. Ltd. and competing companies was obtained from company records and local dealers, whereas primary information concerning farmers' perceptions was gathered directly from the selected respondents. Market share was calculated using the percentage method, while farmers' perceptions were measured through a five-point Likert scale and evaluated using the Weighted Mean Score (WMS) technique. The findings indicated that BPG-100 (BGMH-9101) accounted for a market share of 4.94 per cent, representing 123 bags or 492 kg, out of the total maize seed market of 2,492 bags (9,968 kg) in the study area. This was the lowest share among the major branded companies considered, following others/Local Brands (22.51%), Other Companies (20.63%), Advanta (16.85%), Bayer (15.85%), Pioneer (9.95%) and Syngenta (9.27%). Within the company's overall seed sales, maize contributed only 0.90 per cent, while soybean accounted for 96.02 per cent. Regarding farmers' perceptions, Shelling Percentage (85%) emerged as the most positively evaluated performance attribute, with a WMS of 3.16 and Rank I, followed by Higher Yield (WMS = 3.00) and Grain Quality/High Test Weight (WMS = 2.92), whereas Uniform Cob Size received the lowest score (WMS = 2.88). Among agronomic and adaptability characteristics, Suitability for Nagpur Climate obtained the highest WMS of 3.42 (Rank I), followed by Disease Tolerance (WMS = 2.90) and Drought Tolerance (WMS = 2.84), while Early Vigour recorded the lowest score (WMS = 2.58). The study concludes that although BPG-100 (BGMH-9101) currently commands a relatively small market share, it has a moderately favourable perception among farmers, especially with respect to climatic adaptability and grain characteristics. This indicates considerable potential for expanding its market presence through a stronger dealer network, focused field demonstrations and enhanced farmer awareness.

Keywords: Maize hybrid, market share, farmers' perception, weighted mean score, Nagpur district

Introduction

Maize (*Zea mays* L.) is one of the most important cereal crops in India, valued for its wide adaptability, high productivity and multiple end-uses spanning human food, poultry and animal feed, starch and ethanol industries. Maharashtra ranks among the top three maize-producing states in the country, contributing nearly 11 per cent of national maize production, with Vidarbha, Marathwada, Western Maharashtra and Khandesh being the major growing regions. Within Vidarbha, Nagpur district has increasingly witnessed the adoption of single-cross hybrid maize, supported by rising demand from the poultry, feed and ethanol sectors and a favourable minimum support price.

The private hybrid seed sector plays a central role in improving maize productivity by continuously introducing improved hybrids suited to local agro-climatic conditions. Booster Plant Genetics Pvt. Ltd., operating under the Paris Group of Companies, is one such research-driven seed company that has introduced the maize hybrid BPG-100 (BGMH-9101) for cultivation in the Nagpur region, alongside its existing portfolio of soybean, cotton and pigeon pea seeds. In a market crowded with several established multinational and domestic

seed brands, a new hybrid's commercial success depends jointly on the market share it is able to capture and the extent to which farmers perceive it favourably in terms of yield, grain quality and adaptability to local conditions. Farmers' adoption decisions are strongly influenced by their perception of a hybrid's performance, and this perception, in turn, shapes repeat purchase and word-of-mouth promotion, which ultimately determine a product's market position. Information on the current market share of BPG-100 (BGMH-9101) relative to competing brands, together with a systematic assessment of farmers' perception of its performance attributes, can therefore provide valuable feedback to the company, seed dealers and extension functionaries for refining production planning and promotional strategy. The present study was accordingly undertaken with the following two objectives:

1. To study the market share of the maize hybrid BPG-100 (BGMH-9101) produced by Booster Plant Genetics Pvt. Ltd. in Nagpur district.
2. To assess farmers' perception about the performance of the BPG-100 (BGMH-9101) maize hybrid produced by the company.

Methodology

Study area and sampling design

The present study was conducted in Nagpur district of the Vidarbha region of Maharashtra, purposively selected on the basis of the concentration of maize growers cultivating the BPG-100 (BGMH-9101) hybrid. Out of the district, two maize-growing talukas, viz., Kuhi and Umred, were selected. From these two talukas, thirteen villages (six from Kuhi and seven from Umred) were selected, and fifty maize-growing farmers were selected through simple random sampling - twenty-five each from Kuhi and Umred - constituting the total sample for the study. The study pertains to the agricultural year 2025-26. Secondary data relating to the total maize seed sales of all companies operating in the study area, as well as the sales of BPG-100 (BGMH-9101), were collected from seed dealers and company records. Primary data on farmers' perception of the hybrid's performance were collected from the fifty selected farmers through personal interviews using a specially designed structured interview schedule.

Analytical methods

1. Market share of BPG-100 (BGMH-9101) hybrid

Market share was worked out using the following formula (percentage method)

Market Share (%) = (Sales of BPG-100 hybrid / Total maize seed sales of all companies in the study area) × 100

2. Farmers' perception of BPG-100 (BGMH-9101) hybrid

Farmers' perception regarding the performance of BPG-100 (BGMH-9101) was assessed using a five-point Likert scale (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1) across a set of variety-performance and crop-performance statements. The perception was quantified using the Weighted Mean Score (WMS), computed as:

$$WMS = \Sigma (f \times w) / N$$

Where, f = frequency of farmers selecting a particular response; w = weight assigned to the response (1-5); and N = total number of respondents. Statements were ranked in

descending order of their WMS, with the highest score assigned Rank I, indicating the most favourable perception.

Results and Discussion

1. Market Share of BPG-100 (BGMH-9101) Maize Hybrid

Market share reflects the proportion of total sales in a market accounted for by a particular company, brand or product, and is an important indicator of competitive position. The market share of BPG-100 (BGMH-9101) was assessed both in relation to the company's own product portfolio and in relation to competing maize seed brands operating in the study area.

Table 1: Company-wise Contribution to total sales of booster plant genetics pvt. ltd. in Nagpur district, 2025-26

Sr. No.	Crop wise Seed Sales Contribution of Booster Plant Genetics	Total Seed Sales Reported by Dealer of Booster Plant Genetics (kg)	Company Share in Percentage
1	Soybean	52,500	96.02
2	Cotton	1,425	2.60
3	Maize (BPG-100)	492	0.90
4	Tur	262	0.48
	Total	54,679	100.00

Table 1 shows that within the company's own seed portfolio, soybean was overwhelmingly dominant, accounting for 96.02 per cent (52,500 kg) of total sales, followed by cotton (2.60%). The maize hybrid BPG-100 (BGMH-9101) contributed only 0.90 per cent (492 kg) to total company sales, while tur varieties together contributed the lowest share (0.48%). This indicates that maize currently occupies a comparatively small, though strategically important, segment within the company's overall business, with considerable room for expansion relative to its established soybean business.

Table 2: Market share of BPG-100 (BGMH-9101) and competing maize seed companies in Nagpur district, 2025-26

Sr. No.	Company Wise Distribution of Total Maize Seed Sales	Total Seed Bags Sales Reported by Dealers of All Brands	Total Seed Sales Reported by Dealers of All Brands (kg)	Market Share of Competitive Brands in Maize in Percentage
1	Booster Plant Genetics (BPG-100)	123	492	4.94
2	Syngenta	231	924	9.27
3	Advanta	420	1,680	16.85
4	Bayer	395	1,580	15.85
5	Pioneer	248	992	9.95
6	Other Companies	514	2,056	20.63
7	Others/Local Brands	561	2,244	22.51
	Grand Total	2,492	9,968	100.00

The data presented in Table 2 reveal that the total maize seed market in the study area comprised 2,492 bags (9,968 kg) during 2025-26. Others/Local Brands held the largest share of the market (22.51%), followed by Other Companies (20.63%), Advanta (16.85%) and Bayer (15.85%), while Pioneer and Syngenta accounted for 9.95 and 9.27 per cent, respectively. BPG-100 (BGMH-9101) recorded a market share of 4.94 per cent, which was the lowest among the

individual branded companies considered in the study. The relatively low market share indicates considerable scope for strengthening the market presence of BPG-100 through wider dealer coverage, field demonstrations and farmer-awareness programmes. The findings indicate considerable scope for BPG-100 (BGMH-9101) to expand its market position through intensified field demonstrations, wider dealer coverage and targeted awareness programmes among maize-growing farmers of Nagpur district.

2. Farmers' perception about BPG-100 (BGMH-9101) maize variety

Farmers' perception plays a central role in the continued adoption of a crop variety. The performance of BPG-100 (BGMH-9101) was assessed among the fifty sample farmers on ten attributes spanning variety performance and crop/agronomic performance, using a five-point Likert scale, and the responses were analyzed through the Weighted Mean Score (WMS) technique, with attributes ranked accordingly.

Table 3: Farmers' perception on variety-performance attributes of BPG-100 (BGMH-9101) maize hybrid (n = 50)

Attribute	SD (1)	D (2)	N (3)	A (4)	SA (5)	Weighted Score	Weighted Mean Score	Rank
Higher Yield	12	4	15	10	9	150	3.00	II
Uniform Cob Size	10	13	9	9	9	144	2.88	V
Attractive Orange-Yellow Grain	10	11	10	11	8	145	2.90	IV
Grain Quality / High Test Weight	10	13	10	5	12	146	2.92	III
Shelling Percentage (85%)	11	4	15	6	14	158	3.16	I

Table 3 shows that farmers held a moderately favorable perception of BPG-100 (BGMH-9101) with respect to its variety-performance attributes. Shelling Percentage (85%) received the highest Weighted Mean Score (3.16) and was ranked first, followed by Higher Yield (WMS = 3.00, Rank II) and Grain Quality/High Test Weight (WMS = 2.92, Rank III). Attractive Orange-Yellow Grain (WMS = 2.90) was ranked fourth, while Uniform Cob Size recorded the lowest score (WMS = 2.88, Rank V). These results indicate that farmers valued the grain-processing and yield-related qualities of the hybrid most highly, whereas cob uniformity was the comparatively weaker attribute in farmers' perception.

Table 4: Farmers' perception on crop and agronomic performance attributes of BPG-100 (BGMH-9101) maize hybrid (n = 50)

Attribute	SD (1)	D (2)	N (3)	A (4)	SA (5)	Weighted Score	Weighted Mean Score	Rank
Early Vigour	8	13	20	7	2	129	2.58	VI
Lodging Resistance	10	13	10	11	6	140	2.80	V
Disease Tolerance	9	12	14	8	7	145	2.90	II
Pest Resistance	9	13	12	10	6	141	2.82	IV
Drought Tolerance	10	11	13	8	8	142	2.84	III
Suitable for Nagpur Climate	8	6	14	4	18	171	3.42	I

Table 4 shows that Suitability for Nagpur Climate received the highest Weighted Mean Score (3.42) and was ranked first, indicating that farmers considered BPG-100 (BGMH-9101) well adapted to the local agro-climatic conditions of Nagpur district. Disease Tolerance ranked second (WMS = 2.90), followed by Drought Tolerance (WMS = 2.84, Rank III) and Pest Resistance (WMS = 2.82, Rank IV), reflecting a moderately favorable perception of the hybrid's stress-tolerance characteristics. Lodging Resistance was ranked fifth (WMS = 2.80), while Early Vigor recorded the lowest score (WMS = 2.58, Rank VI). These results suggest that local climatic adaptability was the single most valued agronomic trait of BPG-100 (BGMH-9101) among farmers, while early crop vigour was perceived as comparatively weaker and may warrant attention in future breeding or agronomic recommendations.

Taken together, the perception analysis indicates that farmers of Nagpur district hold a moderately favorable overall opinion of BPG-100 (BGMH-9101), with particular appreciation for its shelling percentage, yield and adaptability to local climatic conditions, while uniform cob size and early vigour received the lowest score, indicating that this attribute may require greater attention in future promotional and agronomic recommendations. Since a positive perception is a strong precursor to sustained adoption, these findings, considered alongside the hybrid's currently modest market share of 4.94 per cent, suggest that BPG-100 (BGMH-9101) has an underlying performance basis that could support market growth if supported by stronger promotional and distribution efforts.

Conclusion

The study revealed that the maize hybrid BPG-100 (BGMH-9101) produced by Booster Plant Genetics Pvt. Ltd. currently holds a modest market share of 4.94 per cent in the maize seed market of Nagpur district, the lowest among the major branded companies compared, and contributes only 0.90 per cent to the company's own overall seed sales, which remain dominated by soybean. Despite this limited market presence, farmers' perception of the hybrid was found to be moderately favorable, with shelling percentage, yield and grain quality rated highly among variety-performance attributes, and suitability to the Nagpur climate and disease tolerance rated highly among agronomic attributes. The gap between the hybrid's favorable perception and its limited market share points to untapped potential that could be realized through strengthened dealer networks, wider farmer awareness programmes and targeted field demonstrations highlighting the attributes that farmers value most, particularly climatic adaptability and grain quality.

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