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PURCHASE BEHAVIOUR OF PADDY FARMERS TOWARDS HYBRID PADDY SEEDS IN DHARAMPUR TALUKA OF VALSAD DISTRICT

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ABSTRACT

Seed is the initial point of cropping cycle. Seeds play a vital role in agriculture and the seeds industry is rapidly growing due to the rising demand for increased food production and high quality seeds. The primary aim of this study was to explore the purchase behaviour of farmers regarding hybrid paddy seeds. To fulfill the objective descriptive research design was adopted with Multi-stage sampling method. Initially, Dharampur taluka was purposefully selected from 6 talukas in Valsad district. In the next stage, 10 villages were randomly selected within Dharampur taluka. Finally, 10 paddy farmers were conveniently selected from each village, resulting in a total sample size of 100 farmers. The structured interview schedule was used to collect the primary data from farmers. The collected data was analyzed with the help of statistical tools as simple percentage analysis, weighted average mean, rating scale, etc. The study found that most farmers (56%) were belonged to 41 to 50 year age group, primarily had secondary education (45%) and commonly combined farming with animal husbandry (58%). Most of the farmers (56%) owned small, fragmented land under 1 hectare. Hybrid paddy seed purchase was influenced by past experience and product benefits.

KEY WORDS: *Socio-economic profile, Purchase behaviour, Paddy farmers, Hybrid paddy seeds, Valsad district*

1. INTRODUCTION

Seeds are vital and fundamental component for producing agricultural crops. It is the most cost-effective way to boost both production and productivity and seed quality contributes to about 20-25% of overall productivity (DoA&FW, 2024). The shift from farmers saving seeds to purchase high-yielding varieties (HYVs) and hybrid seeds is crucial for ensuring quality seed production and timely availability, which are vital for national food security (Pandey et al., 2020). The global seed industry showed significant growth in last decade. It grew from US$ 52 billion in 2014 to US$ 70 billion in 2023-24, reflecting a compound annual growth rate of 4.5%. India holds the position of the fifth-largest seed market in the world, with United States, China, France and Brazil being the only countries ahead in terms of market size (NSAI, 2024). There are many growth drivers of seed industry in last few decades like, the introduction of Bt cotton in 2002 led to a significant increase in cotton cultivation, driving hybrid cotton seed demand, Hybrid maize and rice seeds also saw rapid growth, raising yields and market value, open-pollinated varieties and vegetable seeds experienced noteworthy market expansion due to increased seed replacement rates and usage (Manjunath et al., 2013). The Seed Replacement Rate (SRR) refers to the percentage of crop area sown with certified or quality seeds, rather than seeds saved from previous harvests, during a planting season. This rate provides insights into the extent of quality seed usage by the farmers (Gupta, 2021).

The Indian Seed Programme significantly supports agriculture by advancing hybrid seed production, industry collaboration and crop biotechnology, through streamlined regulations and public awareness are essential for broader adoption (Singh et al., 2019). By 2050, India's growing population will pressure farmers to boost production despite limited resources. Improved seeds replacement strategies, stress-resistant varieties and advancements in seed technology are crucial. India must enhance infrastructure, research and collaboration between public and private sectors to increase productivity and compete in global seed markets (Kumar et al., 2018). The vegetable seed industry has significant potential in agriculture-driven economies like India. Ensuring timely, affordable access to quality seeds is crucial, with strict seed laws needed to protect farmers. Public-private collaboration in R&D, germplasm exchange and policy improvements can boost seed quality and availability, especially benefiting smaller seed companies (Koundinya and Kumar, 2014). A robust seed production system is vital for food security and agricultural growth. Declining breeder seed availability poses long-term risks to quality seed access. Timely planning and coordination among stakeholders are needed demand. India's diverse agro-climatic zones and government support offer potential to boost the seed sector and global trade (Chauhan et al., 2016).

Paddy cultivation is essential for food security and rural livelihoods in India, with hybrid paddy seeds gaining prominence due to their potential for higher yield, pest resistance and adaptability to changing climates. Present study examines the purchase behaviour of paddy farmers in

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Dharampur Taluka of Valsad District of Gujarat State, where paddy is a key crop and staple food.

2. OBJECTIVES OF STUDY

The primary objectives of study were to study the socio-economic profile of paddy farmers and to study the farmers' purchase behaviour towards hybrid paddy seeds.

3. MATERIALS AND METHODS

For present study, a Descriptive Research design was used to address the research objectives. The research was conducted in Dharampur taluka of Valsad district, which consists of 6 talukas. In the year 2021-22, Valsad district's area under paddy cultivation was 70,950 hectares and production was 2,75,505 MT. (NABARD, 2024) For this study, a multi-stage sampling method was used. In the very first stage, Dharampur taluka of Valsad district was purposively chosen. In the second stage, a random selection of 10 villages of Dharampur taluka were carried out. In the third stage, 10 paddy growing farmers were conveniently selected from each of these villages, results in a total sample size of 100 farmers. Based on available literature the interview schedule was prepared. The primary data was collected through personal interviews with farmers, with the help of structured interview schedule as data collection tool. To analyze data, several analytical tools were used, including percentage analysis, mean, tabular analysis and rating scale to draw meaningful conclusions.

4. RESULTS AND DISCUSSION

4.1 Socio-economic profile of farmers

The study revealed that 56% of farmers were belonged to 41 to 50 year age group, followed by 19% were belonged to 51 to 60 year age group, 18% were belonged to 31 to 40 year age group, while only 4% were over 60 year age and 3% were belonged to 21 to 30 year age group. This finding supports the finding of (Vasava, 2013) who stated that most (60%) of the farmers of tribal area in South Gujarat were middle aged (36 to 56 year). In case of education, 45% of farmers had secondary level education, 29% had below SSC level education, 22% had HSC level education and 4% had a UG/PG degree. Regarding occupations, 58% farmers were involved in both farming and animal husbandry, 25% farmers relied solely on farming, 10% were engaged in farming and services and 7% combined farming with business. Income distribution showed that 46% of farmers earned between Rs. 2,00,001 to 3,00,000 annually, followed by 39% earning Rs. 3,00,001 to 4,00,000. Only 7% farmers had income between Rs. 4,00,001 to 5,00,000, while 5% farmers had income above 5,00,000 and 3% farmers had income below 2,00,000. This finding supports the finding of (Dinakar, 2016) who found that 38.21% farmers in South Gujarat have income of 2,00,000 to 4,00,000. Landholding were small and fragmented, with 56% owning less than 1 hectare, 41% owning between 1 to 2 hectares, 2% holding between 2 to 4 hectares and only 1% with land between 4 to 10 hectares. No large farmers were found in study area. This finding supports finding of (Tengli and Sharma, 2017) that most (54%) of the farmers in South Gujarat were marginal and small farmers. All farmers in study area uses rain water as irrigation but late maturing varieties requires more water so, there were 41% farmers has different irrigation sources. The monsoon is unpredictable and the late maturing varieties takes more than 130 days to grow completely so, those farmers who has different irrigation sources can grow late maturing varieties.

4.2 Purchase behaviour of farmers towards hybrid paddy seeds

Table 1 Duration of Variety and Sources of Information

Duration of Variety (n = 100, multiple responses)		
Paddy Variety	**Frequency**	**Rank**
Early Duration (90-110 days)	63	I
Medium Duration (111-130 days)	21	III
Late Duration (More than 130 days)	26	II
Sources of Information for purchase of Hybrid Paddy Seeds (n = 100, multiple responses)		
Source	**Frequency**	**Rank**
Fellow Farmers	26	IV
Company Representative	88	I
Dealer	41	III
Advertisement	17	V
Farmers Meetings	69	II

Table 1 shows the duration of variety farmers grow. Most of the farmers grow early duration (90-110 days) variety followed by late duration (more than 130 days) variety and medium duration (111-130 days) variety. Early duration variety complete their life cycle within the monsoon season; however late duration variety requires more water. Therefore, it is assumed that late duration varieties are grown only by farmers who have irrigation facilities. (Dubey, 2021) found that medium duration (111-130 days) variety was most preferred by farmers (54.2%), followed by short duration (90-110 days) (20.8%) and long duration (more than 130 days) (18.3%). Farmers primarily gain awareness of hybrid seeds through company representative, followed by farmers meetings, dealers, fellow farmers and advertisements. (Divya, 2002) found that agricultural extension officers were ranked as prime source of information for hybrid rice purchase followed by Local dealers, peer groups and agricultural universities.

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Table 2 Place of Purchase and Preferred Packaging Size

Place of Purchase for Hybrid Paddy Seeds		
Place	**Frequency**	**Percentage**
Co-operative	0	0%
Local Dealers	100	100%
Online Platform	0	0%
Total	**100**	**100%**
Preferred Packing Size of Hybrid Paddy Seeds		
Packaging Size	**Frequency**	**Percentage**
1 Kg	86	86%
3 Kg	14	14%
Total	**100**	**100%**

Table 2 shows that all farmers in the study area buy hybrid paddy seeds from local dealers. Farmers choose packaging size according to their requirements. All farmers in the study area prefer 1Kg packaging. However, 14% farmers also prefer 3 Kg packaging.

Table 3 shows the different factors considered by farmers at the time of purchase of hybrid paddy seeds. Farmers were asked to give response on 5 – point rating scale on 1 – Unimportant, 2 – Somewhat Important, 3 – Neutral, 4 – Important, 5 – Highly Important. Based on responses cumulative score was calculated. The mean was calculated on the basis of cumulative score. The rank was given according to mean. The research depicted that past experience is the most considered parameter with the mean of 4.10, influencing hybrid seed purchase, followed by product benefits (mean 4.05), price (mean 3.86), quality (mean 3.59), dealer recommendation (mean 3.44) and packaging size (mean 2.75). (Ram, 2021) found that yield (60.3%) was most important parameter in purchase of hybrid paddy seeds, while price was least considered parameter. (Bisht, 2010) found that grain types were most important parameter with the mean of 4.48 followed by price (mean 4.06).

Table 3 Factors considered by farmers for purchase of hybrid paddy seeds (n=100)

Parameters	HI (5)	I (4)	N (3)	SI (2)	UI (1)	CS	Mean	Rank
Price	36 (180)	32 (128)	18 (54)	10 (20)	4 (4)	386	3.86	III
Dealer recommendation	26 (130)	28 (112)	20 (60)	16 (32)	10 (10)	344	3.44	V
Past experience	58 (290)	11 (44)	19 (57)	7 (14)	5 (5)	410	4.10	I
Product quality	32 (160)	25 (100)	21 (63)	14 (28)	7 (7)	359	3.59	IV
Packaging size	7 (35)	10 (40)	49 (147)	19 (38)	15 (15)	275	2.75	VI
Benefits of product	53 (265)	18 (72)	15 (45)	9 (18)	5 (5)	405	4.05	II

HI: Highly Important
I: Important
N: Neutral
SI: Somewhat Important
UI: Unimportant
CS: Cumulative Score
CS = Maximum Scale × No. of Respondents
Mean = CS / Total No. of Respondents

5.CONCLUSION

The global seed industry has seen significant growth, with India emerging as the fifth-largest seed market. However, many Indian farmers still rely on farm-saved seeds, underscoring the need for better seed replacement strategies and access to quality seeds. A study of farmers in Dharampur taluka of Valsad district reveals that farmers in the region, mostly middle aged with secondary level education, manage small, rainfed farms. The study reveals that factors like seed cost, quality, performance and dealer influence shape farmers' purchase decisions for hybrid seeds. Past experience and product benefits are key parameters in their seed choices.

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