Archives of Current Research International

Volume 25, Issue 8, Page 508-517, 2025; Article no.ACRI.141755
ISSN: 2454-7077

Market Potential, Farmer Preferences, and Awareness of Hybrid Cotton in Warangal District of Telangana State, India

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Authors' contributions

This work was carried out in collaboration among all authors. Author STP designed the study, performed the analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors SC, RP and SK managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

Article Information

DOI: https://doi.org/10.9734/acri/2025/v25i81435

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://pr.sdiarticle5.com/review-history/141755

Original Research Article

Received: 03/06/2025
Published: 13/08/2025

ABSTRACT

Aim of the Study: The study aimed to analyze the market potential and assess the awareness and preference levels of farmers and retailers towards Rasi Swift (RCH 971) cotton hybrid in Warangal district. The objective was to understand adoption patterns, identify influencing factors, and develop strategies to increase market share for Rasi Seeds Pvt. Ltd.

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Cite as: *Puli, Sai Tejaswini, Srilatha Challa, Radhika Pagadala, and Supriya K. 2025. "Market Potential, Farmer Preferences, and Awareness of Hybrid Cotton in Warangal District of Telangana State, India". Archives of Current Research International 25 (8):508-17. https://doi.org/10.9734/acri/2025/v25i81435.*

Study Design, Area, and Duration: This was a descriptive study conducted in Warangal district of Telangana state. The study was carried out over a period of four months during the Kharif 2024 season, covering four mandals: Damera, Chennaraopet, Narsampeta, and Thorrur. From each mandal, two villages were purposively selected based on area under cotton cultivation.
Methodology: A multistage sampling technique was adopted. Primary data was collected from a total of 80 respondents, including 60 farmers (users and non-users of Rasi Swift) and 20 retailers using structured interview schedules. Percentage analysis and independent t-tests were used to compare awareness and preference levels between users and non-users. Market potential was estimated based on cotton area and seed requirement (2 packets per acre), while sales data from retailers helped calculate current market share.
Results: The study revealed that Rasi Swift currently holds a market share of approximately 49.58 percent in the cotton seed market of Warangal district. Among the surveyed farmers, the awareness level of Rasi Swift was high, especially among users, who cited its early maturity, high yield potential, and boll size as the major reasons for preference. Retailers also demonstrated strong awareness and confidence in the brand, with 100% of them expressing willingness to sell it again in future seasons. The major sources of awareness were company representatives and farmer feedback, which played a critical role in influencing seed choices. A comparative analysis using t-tests showed that both awareness and preference levels were statistically higher among Rasi Swift users than non-users. Sales records from eight selected villages indicated 11,850 packets sold, while the total cotton seed requirement was 23,900 packets, leaving nearly 50.42 percent of the potential market untapped. The estimated seed requirement was based on standard sowing practices of 2 packets per acre, with cotton acreage totalling 11,450 acres across sample villages. The hybrid was also favored by retailers due to better margins and repeat demand. These findings collectively suggest that strategic promotion, wider demonstration, and stronger supply chain engagement could further improve market penetration.

Keywords: Rasi swift cotton hybrid; farmer awareness; retailer preferences; hybrid cotton seed; market potential; seed sales estimation; consumer behavior; agricultural marketing; dealer engagement; cotton cultivation in Warangal.

1. INTRODUCTION

Agriculture has been practiced in India for thousands of years. It is the primary source of livelihood for 55 per cent of the population (IBEF, 2024). It encompasses a diverse range of crops, livestock, fisheries, and forestry, with agriculture being a key livelihood source for a large population, especially in rural areas. India's agriculture sector plays a vital role in the country's economy, contributing significantly to GDP and employment. The share of Gross Value Added (GVA) of agriculture and allied sectors in total economy during the year 2022 was 18.3 per cent (PIB INDIA, 2023).

Inputs in agriculture refer to resources such as seeds, fertilizers, pesticides, machinery, labor, and technology used in farming activities. The value of inputs in agriculture reflects the investment made by farmers and agricultural businesses to enhance productivity, improve crop quality, and achieve sustainable agricultural practices. Seed is the basic and most critical input for sustainable agriculture. The response of all other inputs depends on quality of seeds to a large extent. Quality of seed accounts for 20-25 per cent of productivity. (Department of Agriculture and Farmers Welfare, 2021)

India has made significant advancements in the seed sector through both public and private initiatives. Institutions like the National Seed Corporation (NSC) and state-specific entities, such as the Telangana State Seed Development Corporation (TSSDC), are pivotal in ensuring the supply of certified seeds to farmers. Additionally, private companies like Rasi Seeds, Kaveri Seeds, and Nuziveedu, as well as multinational corporations such as Bayer and Syngenta, have driven innovation through hybridization and genetic improvements, particularly in high-yielding and pest-resistant varieties (ICAR, 2020). The liberalization of the Indian seed industry in the 1980s and the introduction of genetically modified crops further fueled the development of hybrid seed technologies.

Cotton (*Gossypium* spp.) is one of the most important commercial cash crops cultivated in India. It belongs to the genus Gossypium and the family Malvaceae. Cultivated cotton consists of four species, which include two tetraploid (New World) cotton (*Gossypium hirsutum* and

Gossypium barbadense) and two diploid (Old World) cotton (*Gossypium herbaceum* and *Gossypium arboreum*). *G. hirsutum* accounts for greater than 90 per cent of world production while, *G. barbadense* accounts for 3-4 per cent, and *G. arboreum* and *G. herbaceum* account together for nearly 2 per cent. (Chen *et al*., 2007) Cotton, as the most important natural fiber, is ubiquitous in our daily lives. Due to its unique fiber characters, cotton is used in many industries, such as fashion, textiles, and healthcare (Yu & Yang, 2025). Cotton has been the most consumed fibre in the textile industry from the 1700s, when it played an important role in the Industrial Revolution, to 2002, when it was overtaken by polyester. To this day, it remains the most consumed natural fibre, representing almost a quarter of all fibres processed by the global textile sector (Voora et al., 2023). Cotton provides 59 per cent of the raw materials used in the textile industry. The cotton-based industry contributes 29.1 percent of total textile exports and 4.9 percent of the value of agricultural output. (https://ministryoftextiles.gov.in/). Cotton is one of the most important economic crops globally, playing a central role in both agricultural production and the textile industry (Zhang et al., 2023)

A landmark event in Indian agriculture was the approval of Bt cotton in 2002. This technology enabled cotton plants to resist the American bollworm (*Helicoverpa armigera*) by expressing insecticidal proteins derived from the soil bacterium *Bacillus thuringiensis* (bt). The initial BT cotton hybrids mech 12, mech 162, and mech 184 were developed by Mahyco-Monsanto Biotech (MMB) and approved by the Genetic Engineering Appraisal Committee (GEAC). the adoption of bt cotton led to a sharp decline in pesticide usage and significantly improved cotton productivity in India (Kranthi, 2012; James, 2002).

Hybrid cotton, including Rasi Swift a product of Rasi Seeds Pvt. Ltd. has played a key role in meeting farmers' expectations for high yield, boll size, early maturity, and pest tolerance. with increasing competition among hybrids, understanding farmer and retailer awareness, preferences, and the market potential of hybrids like Rasi Swift has become essential for strategic business planning. this research aims to analyze these dimensions with a focus on the warangal district, which is one of the key cotton-growing regions in Telangana.

1.1 World Cotton Scenario

Global cotton area and production are projected as318.78 lakh hectares and 1429.8 lakh bales respectively during 2023-24. China leads in cotton production with 329.41 lakh bales despite cultivating only 28.72 lakh hectares, while India, with the largest cultivated area of 124.69 lakh hectares, follows closely with 316.76 lakh bales. Brazil, the USA, and Pakistan contribute significantly, producing 194.12, 159.25, and 86.76 lakh bales, respectively. Other notable cotton-producing countries include Australia, Turkey, Uzbekistan, and Argentina. (Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, New Delhi).

1.2 Indian Cotton Scenario

The area under cotton during 2023-24 was 124.69 lakh hectares, with a production of 323.11 lakh bales and a productivity of 429 kg per hectare. (https://cicr.org.in) Among the states, Maharashtra is leading in cotton acreage with 42.34 lakh ha with a production of 82.43 lakh bales and productivity of 331 kg per ha followed by Gujarat with 26.83 lakh ha area with a production of 89.65 lakh bales and productivity of 568 kg per ha, Telangana (18.18 lakh ha with a production of 48.12 lakh bales and productivity of 450 kg per ha (Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, New Delhi, 2024.

1.3 Telangana Cotton Scenario

In Telangana state, the area under cotton was 18.13 lakh ha during 2023-24 as against 20.23 lakh ha during 2022-23. Among the districts, Nalgonda stood first with 2.3 lakh ha followed by Adilabad (1.67 lakh ha), Sangareddy (1.45 lakh ha), Asifabad (1.37 lakh ha) and Vikarabad (1.06 lakh ha). (Cotton March 2024).

2. METHODOLOGY

Warangal district of Telangana was purposively selected for this study, as it is a prominent cotton-growing region with significant cultivation of Rasi Swift hybrid cotton. The district also holds high commercial relevance for Rasi Seeds, making it an ideal location to assess market potential and stakeholder perceptions. A total of 100 respondents were selected using a multi-stage random sampling technique, including 80 farmers and 20 retailers. Four mandals with the highest cotton acreage Narsampeta, Damera,

Chennaraopeta, and Thorrur were identified. From each mandal, two leading cotton-growing villages were selected, and 10 farmers were randomly chosen from each village, constituting the farmer sample. Additionally, five major cotton markets were selected conveniently from which four retailers each were selected.

Primary data were collected through personal interviews using a pre-tested structured questionnaire that included closed-ended questions. The questionnaire covered key areas such as awareness, adoption, constraints, preferences, yield performance, input costs, and profitability associated with the Rasi Swift hybrid. To measure perception and awareness levels, itemised rating scales like the Likert scale were used. Secondary data were gathered from government records, village and mandal offices, company reports, academic sources, and marketing databases.

The collected data were analysed using descriptive statistics such as percentages, means, and standard deviations. In addition, analytical tools like the mean rank method, independent t-test, and market potential estimation (based on area under cotton and average seed rate) were employed to derive meaningful insights related to stakeholder perceptions and demand estimation for Rasi Swift hybrid cotton.

3. RESULTS AND DISCUSSION

3.1 Demographic Profile of Respondents

The demographic characteristics of the respondents provide valuable insights into the socio-economic background influencing the adoption and perception of Rasi Swift hybrid cotton. The study comprised 80 farmer respondents selected from eight villages across four mandals in Warangal district, Telangana. The age composition of the respondents revealed that the majority were in the middle-aged group of 36 to 50 years, accounting for 47.5 percent, followed by 31.25 percent who were above 50 years, and 21.25 percent below the age of 35. This indicates that the decision-making in cotton cultivation is largely driven by experienced and mature individuals.

In terms of educational qualifications, a significant number of respondents (53.75 percent) had completed high school or intermediate education. Graduates and diploma holders constituted 26.25 percent of the sample, while the remaining 20 percent were either illiterate or had only primary level education. The educational profile suggests that a considerable portion of the farmer population has attained formal education, which can positively influence their openness to adopt newer seed technologies like Rasi Swift.

Regarding occupational status, 30 percent of respondents were private sector employees engaged in farming alongside their job, 25 percent were government employees, and another 25 percent were homemakers actively involved in agricultural operations. Additionally, 11.25 percent were self-employed as business owners and 8.75 percent were retired individuals. These statistics highlight that cotton farming is practiced by a diverse set of individuals with varied professional backgrounds.

The data on family size reveals that a majority of respondents, about 62.5 percent, had families comprising 3 to 4 members. Another 18.75 percent had 5 to 6 members in the household, while 17.5 percent had only 1 to 2 members, and a minimal 1.25 percent had large families of 7 members or more. This family structure reflects the rural trend toward smaller, independent family units.

In terms of landholding size, around 40 percent of the respondents were smallholders owning less than 2 acres, 45 percent fell under the medium farmer category with holdings between 2 to 5 acres, and the remaining 15 percent were large farmers with more than 5 acres of cultivable land. Most of the farmers had over 10 years of experience in cotton cultivation. Many respondents were willing to shift hybrids based on performance outcomes and peer recommendations.

Overall, the demographic profile illustrates a mix of education levels, occupations, age groups, and landholding categories. This diversity influences the levels of awareness and ultimately the adoption decisions related to Rasi Swift hybrid cotton.

Table 1. Demographic information of the respondents

S. No	Demographic Characteristic	Category	No. of Respondents (n = 80)	Percentage (%)
1	**Age Group (Years)**	Less than 30	13	16.25
		31 – 40	24	30.00
		41 – 50	21	26.25
		51 – 60	14	17.50
		Above 60	8	10.00
2	**Education Level**	Illiterate	8	10.00
		Primary Education	14	17.50
		Secondary Education	29	36.25
		Higher Secondary	17	21.25
		Graduation and Above	12	15.00
3	**Land Holding Size (Acres)**	Marginal (< 2.5 acres)	28	35.00
		Small (2.5 – 5 acres)	34	42.50
		Medium (5 – 10 acres)	13	16.25
		Large (> 10 acres)	5	6.25
4	**Farming Experience (Years)**	< 5 Years	12	15.00
		5 – 10 Years	26	32.50
		11 – 15 Years	18	22.50
		16 – 20 Years	12	15.00
		> 20 Years	12	15.00
5	**Annual Income (Rs.)**	< ₹1,00,000	10	12.50
		₹1,00,001 – ₹2,00,000	22	27.50
		₹2,00,001 – ₹3,00,000	25	31.25
		₹3,00,001 – ₹4,00,000	14	17.50
		Above ₹4,00,000	9	11.25

3.2 Awareness and Sources of Information

The level of awareness regarding Rasi Swift (RCH 971) hybrid cotton among farmers in Warangal district showed a clear contrast between users and non-users. Out of the total 80 respondents, 60 were users and 20 were non-users of the hybrid cotton. Among the users, a substantial 95 percent reported being aware of Rasi Swift before adoption, indicating a strong outreach by the company and an effective flow of information among the farming community. In comparison, only 55 percent of the non-users were aware of the hybrid, revealing a significant awareness gap that may contribute to the lower adoption in certain segments.

The sources of awareness further highlight the contrasting exposure pathways for the two groups. Among users, the most influential sources were company field demonstrations (35 percent) and peer farmer recommendations (33.3 percent). These two collectively account for over two-thirds of the awareness channel, suggesting that farmers trust hands-on experiences and interpersonal networks when evaluating new inputs. Retailers contributed to 21.7 percent of user awareness, while media and print advertisements played a smaller role (10 percent). On the other hand, non-users were mainly informed through retailers (40 percent) and fellow farmers (35 percent). Only a marginal 10 percent had awareness through field staff, and 15 percent reported learning about the hybrid via informal sources or advertisements. The data indicates that structured and formal awareness programs have had limited penetration among non-user farmers, restricting their decision-making confidence.

To statistically validate whether there is a significant difference in the awareness levels between users and non-users, an Independent t-

test was conducted. Awareness was measured on a 5-point Likert scale based on familiarity with the product, knowledge of features (boll size, maturity, pest resistance), and exposure to promotions. The mean awareness score for Rasi Swift users was found to be 4.28 with a standard deviation of 0.23, while non-users had a mean score of 2.67 with a standard deviation of 0.14 The independent t-test produced a t-value of 7.12, and the result was statistically significant at the 5 percent level ($p < 0.05$).

Independent t-Test Results

- **t-value** = 7.12
- **Degrees of freedom (df)** = 78
- **p-value** < 0.05 (**Significant**)

3.3 Preferences between Rasi Swift Users and Non-Users

The preferences of farmers regarding hybrid cotton varieties revealed significant differences between Rasi Swift users and non-users. The variations in their selection criteria were primarily influenced by their experiences, perceived performance of competing hybrids, and accessibility of information. Among the 80 respondents surveyed, 60 were Rasi Swift users and 20 were non-users, allowing for a clear comparison of preference patterns across both groups.

Farmers who adopted **Rasi Swift** highlighted several performance-related traits as critical in their decision-making. The **top three deciding factors** cited were **early maturity**, **large boll size**, and **high yield**. These preferences were shaped by their positive cultivation experience with the hybrid. Specifically, early maturity was particularly appreciated by users as it allowed timely harvests and helped reduce the crop's exposure to **late-season pests**, thereby lowering production risks. Yield performance ranked second, with a majority of users reporting **yields above 700 kg/acre**, which closely aligns with the yield claims made by the seed company. Large boll size was another key trait preferred by users due to its direct association with better picking efficiency and market value.

On the other hand, **non-users of Rasi Swift** reported a different set of preferences while selecting cotton hybrids. The most influential factors in their decision were **pest tolerance, brand familiarity**, and **availability of credit or promotional discounts**, especially against sucking pests. The non-users generally cultivated hybrids such as **Aadya (Nuziveedu)**, **Sadanand (Crystal)**, and **Ranadeer (Royal)**. A notable portion of non-users acknowledged that they had **limited information** or **no direct feedback** from peers regarding Rasi Swift's performance, which deterred them from trying it. This reflects a **classic barrier in hybrid adoption**, wherein a **lack of targeted extension communication** and **risk aversion** restrict the diffusion of newer varieties.

To further understand the priority of selection attributes, a **mean rank analysis** was conducted. Each respondent was asked to rank seven important hybrid attributes on a scale of 1 to 7, where **1 indicated highest preference** and **7 indicated the least**. The analysis revealed significant contrasts in trait prioritization between users and non-users, as shown below.

Test Results:

- t-value = 7.12
- Degrees of Freedom (df) = 78
- p-value < 0.05

3.4 Retailer Perception and Market Trends

Retailers play a pivotal role in shaping farmers' hybrid cotton preferences, acting as both advisers and facilitators at the point of purchase. In the present study, a total of **20 retailers** from prominent cotton markets in the Warangal district were interviewed to understand their perceptions about Rasi Swift (RCH 971) and ongoing market dynamics in the hybrid cotton seed segment.

The findings reveal that **70 percent of retailers actively recommended Rasi Swift** to farmers. This high rate of recommendation was primarily attributed to **consistent demand**, **positive farmer feedback,** and **repeat purchases**,

Table 2. Comparison of Awareness Scores Between Users and Non-Users of Rasi Swift

Group	Mean Awareness Score	Standard Deviation	Sample Size (n)
Users (n = 60)	4.28	0.23	60
Non-Users (n = 20)	2.67	0.14	20

Table 3. Mean Rank Scores of Hybrid Selection Preferences among Users and Non-Users

Attribute	Mean Rank (Users)	Rank (Users)	Mean Rank (Non-Users)	Rank (Non-Users)
Early Maturity	2.15	1	4.75	4
High Yield	2.50	2	5.20	5
Large Boll Size	2.80	3	5.35	6
Pest Tolerance	3.50	4	2.60	1
Brand Familiarity	4.40	5	2.90	2
Credit/Discount Facility	4.85	6	3.30	3
Seed Availability	5.05	7	4.90	7

Table 4. Independent t-Test Results for Preference Attributes Between Users and Non-Users

Attribute	Mean Rank (Users)	Mean Rank (Non-Users)	T-Statistic	P-Value	Significance
Early Maturity	2.21	4.72	–15.39	0.0000	**Significant**
High Yield	2.54	5.13	–14.18	0.0000	**Significant**
Large Boll Size	2.87	5.34	–13.90	0.0000	**Significant**
Pest and Disease Tolerance	3.43	2.70	4.82	0.0000	**Significant**
Brand Familiarity	4.42	2.86	7.93	0.0000	**Significant**
Credit/Discount Facility	4.85	3.20	7.41	0.0000	**Significant**
Seed Availability	5.03	4.90	1.12	0.2645	*Not Significant*

Table 5. Retailers' Perception on Rasi Swift Hybrid Cotton

Parameter	Response (%)
Retailers recommending Rasi Swift	70
Retailers observing repeat purchase by farmers	65
Perceived major strengths of Rasi Swift	High demand (40), Yield (35), Early maturity (25)
Satisfaction with company support	75
Support appreciated from the company	Demos (45), Posters/Materials (30), Technical guidance (25)
Retailers reporting supply issues	25
Retailers citing communication delays	20

suggesting a growing sense of **brand loyalty** among adopters. Retailers reported that farmers who tried Rasi Swift often returned for the same hybrid in the following seasons, which is a rare trend in a market otherwise dominated by seasonal experimentation and brand switching. This repeat demand signals the hybrid's performance reliability under field conditions and reflects well on its positioning in the market.

Retailers also appreciated the **marketing and field-level support** extended by Rasi Seeds. Several mentioned the usefulness of **product demonstrations, technical visits by company field staff,** and **visibility through promotional materials** like banners, hoardings, and brochures at retail points. These initiatives not only helped in creating awareness but also provided the retailers with confidence while recommending the hybrid to prospective buyers.

However, some concerns were raised. A few retailers (about **25%)** expressed dissatisfaction with **delays in supply during peak sales periods** and **slow communication** from the company side during urgent stock replenishment requests. These operational bottlenecks, if not addressed proactively, might negatively impact product availability and could eventually hurt the hybrid's market share despite its agronomic performance.

Overall, the perception of Rasi Swift among retailers was favorable, supported by structured promotional efforts, agronomic reliability, and returning customer behavior. However, for long-term sustainability in a competitive seed market,

operational efficiency and continuous retailer engagement will be essential.

3.5 Assessment of Market Potential for Rasi Swift in the Study Area

The market potential for Rasi Swift (RCH 971) hybrid cotton seed in the selected mandals of Warangal district appears highly promising, supported by favorable agronomic traits such as early maturity, high yield, and resistance to pests and diseases. farmers who have adopted Rasi Swift reported satisfaction with its performance and expressed willingness to continue its cultivation in future seasons. additionally, retailers confirmed that the variety is in good demand, indicating its strong market presence and brand recognition.

To quantify this potential, data on the total cotton cultivation area and seed usage practices was collected from agricultural offices and village-level surveys. farmers in the study area reported using an average of two 450g seed packets per acre. with a total of 11,450 acres under cotton across the eight surveyed villages, the estimated seed demand stands at 22,900 packets of 450g each.

This data highlights the commercial opportunity for Rasi Swift in terms of hybrid seed demand and the importance of ensuring timely and adequate seed availability. furthermore, the actual sales performance of Rasi Swift in comparison to other competing hybridswas captured to assess current market penetration.

3.6 Sales Performance of Rasi Swift Compared to Other Hybrids

The sales performance of Rasi Swift (RCH 971) during kharif 2024 across selected villages in Warangal district demonstrates its strong market position compared to competing hybrids like Sadanand, Aadya, and other local brands. Rasi Swift recorded the highest sales in key villages such as Perikedu (2,250 packets), Akkampeta (1,800 packets), and Ammapuram (1,500 packets), indicating widespread farmer preference and trust in the hybrid's performance. While Sadanand and Aadya had modest sales in certain areas, they did not match the consistent lead maintained by Rasi Swift. the brand's popularity can be attributed to its agronomic advantages such as early maturity, high yield, and boll size as well as active support from dealers and the Rasi Seeds technical team. Although the variety dominates in most villages, lower sales in pockets like thimmampeta highlight the need for targeted marketing and awareness initiatives. overall, the data suggest that Rasi Swift enjoys high brand loyalty and offers considerable scope for further market expansion.

Table 6. Estimated Market Potential for Cotton Hybrid Seed in Study Villages

Mandal	Village	Cotton Area (Acres)	Packets Required (450g Each)
Damera	Akkampeta	1,750	3,500
	Seethrampuram	1,200	2,400
Chennaraopet	Jhally	1,350	2,700
	Papaiahpeta	1,150	2,300
Narsampeta	Gurijala	1,200	2,400
	Thimmampeta	800	1,600
Thorrur	Perikedu	2,500	5,000
	Ammapuram	1,500	3,000
Total		**11,450 Acres**	**22,900 Packets**

Table 7. Hybrid Cotton Seed Sales In Study Villages (Kharif 2024)

Mandal	Village	Rasi Swift	Sadanand	Aadya	Others
Damera	Akkampeta	1,800	1,050	250	400
	Seethrampuram	1,200	700	200	300
Chennaraopeta	Jhally	1,300	850	150	400
	Papaiahpeta	1,050	750	200	300
Narsampeta	Gurijala	1,000	850	150	400
	Thimmampeta	750	300	100	450
Thorrur	Perikedu	2,250	1,250	450	1,050
	Ammapuram	1,500	550	100	850
Total		**11,850**	**6,300**	**1,600**	**4,150**

Table 8. Market Share of Hybrid Cotton Seed Brands

Hybrid	Packets Sold	Market Share (%)
Rasi Swift	11,850	49.58
Sadanand	6,300	26.36
Aadya	1,600	6.69
Others	4,150	17.37
Total	**23,900**	**100.00**

3.7 Competitive Positioning and Expansion Scope of Rasi Swift

Rasi Swift currently holds a dominant position in the hybrid cotton seed market across the selected villages in the Warangal district, with a calculated market share of approximately 49.58 percent based on total seed packet sales during Kharif 2024. out of a total market of 23,900 packets (across all hybrid brands), Rasi Swift accounted for 11,850 packets, significantly outpacing its closest competitors, Sadanand (6,300 packets), Aadya (1,600 packets), and other brands (4,150 packets). this performance highlights both strong farmer acceptance and effective retailer engagement. however, the analysis also reveals a remaining market potential of 50.42 percent, which presents a substantial opportunity for Rasi Seeds Private Limited to further expand its footprint. with targeted awareness campaigns, improved logistics, and continued dealer support, Rasi Swift can aim to capture a majority share of the hybrid cotton seed market in these high-potential cotton-growing areas.

To estimate Rasi Swift's current market share in the selected area:

- Total market (all brands) = 23,900 packets
- Rasi swift sales = 11,850 packets

Current market share of Rasi Swift:

(11,850/23,900)×100≈49.58%

The estimated market potential for the study area was 22,900 packets (based on two 450 g packets per acre for the total 11,450 acres of cotton), whereas actual sales during Kharif 2024 were 23,900 packets about 1,000 packets higher than the calculated potential. This difference can be attributed to practical field realities, as farmers often purchase extra seed for gap-filling caused by early-stage pest or disease damage, weather-related losses, or to adopt high-density planting practices for maximizing yields. In rainfed areas, sudden pre-monsoon showers or prolonged dry spells may necessitate re-sowing. Such practices reflect farmers' proactive approach to mitigating risks, ensuring uniform crop stands, and safeguarding yield potential.

This indicates that Rasi Swift holds nearly 50 percent of the hybrid seed market in these villages. while this represents a strong presence, an additional 50.42 percent of the market still remains untapped. this opens avenues for targeted marketing, increased dealer engagement, and improved last-mile delivery strategies to capture the remaining potential.

4. CONCLUSION

The study clearly establishes that Rasi Swift (RCH 971) has emerged as a highly preferred hybrid cotton seed in the Warangal district, driven by its superior agronomic traits such as early maturity, high yield, and larger boll size. Awareness levels were significantly higher among users compared to non-users, primarily due to direct field demonstrations and peer influence. Retailers also played a crucial role in influencing farmer choices, with 70 percent actively recommending Rasi Swift based on positive feedback and repeat purchases. Market analysis revealed that Rasi Swift currently holds a 49.58 percent share in the hybrid cotton seed market, indicating strong brand presence and adoption. However, the remaining 50.42 percent market share presents a significant opportunity for expansion. The estimated seed requirement of 22,900 packets for the surveyed villages underscores the commercial potential of Rasi Swift in the region. To sustain and grow its presence, Rasi Seeds Pvt. Ltd. must strengthen supply chains, enhance farmer engagement, and implement location-specific strategies in underperforming areas like Thimmampeta. Overall, Rasi Swift demonstrates high market viability and strong stakeholder support, making it a competitive leader in Telangana's hybrid cotton seed segment.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

ACKNOWLEDGEMENTS

I express my sincere gratitude to the Chairperson of my advisory committee Dr. Ch. Srilatha, for her valuable guidance, constant encouragement, and insightful suggestions. I am equally thankful to Dr. P. Radhika and Dr. K. Supriya both are the members of my advisory committee for their consulting advice and meticulous guidance. Their contributions have been instrumental in the successful completion of this article. This work would not have been possible without the contributions and dedication of all these individuals.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

All India Coordinated Research Project on Cotton. (2023–2024). *Annual report 2023–24*. https://aiccip.cicr.org.in/

Chen, Z. J., Scheffler, B. E., Dennis, E., Triplett, B. A., Zhang, T., Guo, W., Chen, X., Stelly, D. M., Rabinowicz, P. D., Town, C. D., & Arioli, T. (2007). Toward sequencing cotton (*Gossypium*) genomes. *Plant Physiology, 145*(4), 1303–1310.

Department of Agriculture and Farmers Welfare. (2021). *Seed productivity*. https://agriwelfare.gov.in/en/SeedsDiv

Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW). (2021). *State-wise crop statistics*. Ministry of Agriculture & Farmers Welfare, Government of India. https://agricoop.nic.in/

Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare. (2024). https://desagri.gov.in/

Food and Agriculture Organization of the United Nations (FAO). (2021). *Cotton: World markets and trade*. https://www.fao.org

Indian Council of Agricultural Research (ICAR). (2020). *Handbook of agriculture* (6th ed.). Directorate of Knowledge Management in Agriculture, ICAR.

James, C. (2002). *Global review of commercialized transgenic crops: 2002 – Feature: Bt cotton* (ISAAA Brief No. 27).

Kranthi, K. R. (2012). *Bt cotton: Questions and answers*. Indian Society for Cotton Improvement. https://www.cicr.org.in/pdf/Bt_book_kranthi.pdf

Ministry of Textiles, Government of India. https://ministryoftextiles.gov.in/

Press Information Bureau (PIB). (2023). *Economic survey*. https://www.pib.gov.in

Professor Jayashankar Telangana Agricultural University (PJTAU). (2023, November). *Cotton outlook*. https://www.pjtsau.edu.in/

Voora, V., Bermudez, S., Farrell, J. J., Larrea, C., & Luna, E. (2023). *Cotton prices and sustainability* (pp. 1–37). International Institute for Sustainable Development.

Yu, Z., & Yang, Y. (2025). Carbon footprint of global cotton production. *Resources, Environment and Sustainability, 20*, 100214.

Zhang, Z., Huang, J., Yao, Y., Peters, G., Macdonald, B., La Rosa, A. D., Wang, Z., & Scherer, L. (2023). Environmental impacts of cotton and opportunities for improvement. *Nature Reviews Earth & Environment, 4*, 703–715.

Peer-review history:
The peer review history for this paper can be accessed here:
https://pr.sdiarticle5.com/review-history/141755