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Study on marketing of Hybride paddy seeds in Mirzapur district of Uttar Pradesh

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Abstract

The present study entitled “Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh” was conducted to analyze the socio-economic characteristics of farmers, existing marketing channels, marketing efficiency, and major constraints faced in the marketing of hybrid paddy seeds (Pan MTU-7029, Mansuri Paddy). The study was carried out in Mirzapur district of Uttar Pradesh, where the adoption of hybrid paddy seeds is increasing due to their high yield potential and better economic returns. A multistage sampling design was adopted for the study, and a total of 120 respondents were selected randomly from the selected villages. Primary data were collected through personal interviews using a structured schedule, while secondary data were obtained from government reports, agricultural departments, and related literature. The findings of the study revealed that the majority of respondents belonged to the marginal and small farm categories. Most respondents were from the young age group, and a significant proportion of farmers were literate. Male respondents dominated farming and marketing activities, while most families were nuclear in nature. The majority of respondents belonged to low and middle-income groups. The study identified three major marketing channels involved in the distribution of hybrid paddy seeds: Producer → Farmer, Producer → Dealer → Farmer, and Producer → Distributor → Retailer → Farmer. Among these, Channel-III was the most preferred by farmers due to better market access and wider distribution facilities. However, Channel-I showed the highest marketing efficiency because of lower marketing costs and fewer intermediaries. The study further highlighted several constraints affecting the marketing system of hybrid paddy seeds in the study area. Major problems included high seed prices, exploitation by middlemen, lack of technical knowledge, inadequate availability of certified seeds, poor storage facilities, price fluctuations, high transportation costs, and limited financial support. The study concludes that there is a need to strengthen extension services, improve seed distribution systems, provide institutional financial support, and enhance farmer awareness programs for improving the marketing efficiency of hybrid paddy seeds in Mirzapur district.

Keywords: Hybrid paddy seeds, seed marketing, MTU-7029 Mansuri paddy, marketing channels, marketing efficiency, socio-economic profile, paddy farmers, seed distribution, agricultural marketing, Mirzapur district, Uttar Pradesh, seed dealers, price spread, farmer constraints, rice cultivation

Introduction

Hybrid paddy seed is one of the most important agricultural inputs in modern rice cultivation and plays a vital role in enhancing productivity, improving grain quality, and ensuring food security. In recent years, hybrid paddy seeds have gained considerable importance in India due to their higher yield potential, better resistance to pests and diseases, and suitability for different agro-climatic conditions. These seeds are widely preferred by farmers because they help increase production per unit area and thereby improve farm income. With the rising demand for rice and pressure on limited agricultural land, hybrid seed technology has become an essential component of sustainable agricultural development and the seed industry. In Uttar Pradesh, rice is a major kharif crop, and the adoption of hybrid paddy seeds is gradually increasing due to government support, extension services, and private sector promotion. Mirzapur

district, in particular, has shown increasing use of hybrid paddy seeds because of its varied soil types, irrigation facilities in some areas, and dependence of a large rural population on agriculture. Farmers in the district are progressively shifting towards hybrid varieties to achieve higher productivity and better economic returns. Hybrid seeds are distributed through government agencies, cooperative societies, private seed companies, agro-dealers, and retail input shops. However, farmers still face problems related to timely availability, quality assurance, and high input costs. Marketing of hybrid paddy seeds involves several interconnected activities such as production, certification, processing, packaging, labeling, distribution, and sale to farmers. Seed companies and agencies play an important role in maintaining quality standards and ensuring timely supply. The marketing system generally includes seed producers, processors, distributors, wholesalers,

retailers, agro-input dealers, and farmers. Seeds are sold through licensed dealers and agricultural input centers, often supported by promotional activities such as field demonstrations, farmer awareness programs, and extension services. Proper packaging and certification are essential to maintain seed credibility and farmer confidence. The present study titled “A Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh” aims to analyze the existing marketing system of hybrid paddy seeds and identify major constraints faced by farmers, seed dealers, and other intermediaries in the study area. The study also focuses on socio-economic characteristics of farmers such as age, education, landholding size, farming experience, income level, and access to institutional support, which influence their seed purchasing and adoption decisions. These factors significantly affect awareness, market participation, and the use of improved seed varieties. The study further examines marketing channels, distribution networks, pricing systems, availability patterns, and promotional strategies of hybrid paddy seeds in Mirzapur district. It highlights issues such as the presence of counterfeit seeds, price variation among dealers, inadequate availability during peak sowing seasons, limited awareness among farmers, and weak distribution in remote areas. The roles of government departments, private seed companies, cooperatives, and agro-dealers are also analyzed. By studying these aspects, the research aims to identify gaps in the seed marketing system and suggest measures to improve availability, ensure quality control, strengthen distribution networks, enhance farmer awareness, and promote sustainable agricultural development in Mirzapur district.

Objectives

- To study about the socio-economic profile of the respondents in the study area.
- To identify the existing marketing channel involved in marketing of Hybrid Paddy Seeds Pan MTU – 7029 (Mansuri Paddy) in the study area.

Research Methodology

Sampling Design

For the present study titled “A Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh”, a multistage sampling design was used to select respondents. At the first stage, Mirzapur district was selected purposively due to the increasing use of hybrid paddy seeds. At the second stage, blocks were selected on the basis of seed usage intensity, followed by the selection of villages at the third stage through random sampling. At the final stage, hybrid paddy seed users (farmers) and key stakeholders such as seed dealers, wholesalers, retailers, and agro-input shop owners were selected as respondents. This sampling design was adopted to collect reliable and representative data for analyzing the seed marketing system, distribution channels, pricing pattern, availability, and constraints faced by farmers and market intermediaries in the study area.

Selection of District

The present study was conducted in Mirzapur district of Uttar Pradesh. The district was selected purposively due to the increasing adoption of hybrid paddy seeds and their

growing importance in rice cultivation. Mirzapur has suitable agro-climatic conditions for paddy production and a large agricultural population. The rising awareness among farmers about high-yielding hybrid varieties and the support of government and private seed agencies made the district appropriate for the study.

Selection of Blocks

There are several blocks in Mirzapur District. Out of these, one block was selected purposively for the present study on the basis of higher area under paddy cultivation and greater adoption of hybrid paddy seeds (MTU-7029 Mansuri Paddy). The selected block is agriculturally important and has favorable agro-climatic conditions suitable for paddy cultivation. Farmers of this block have been cultivating paddy, including hybrid varieties, for several years.

Selection of Villages

A complete list of villages of the selected block was obtained from the Block Development Office (B.D.O). The villages were arranged in descending order on the basis of paddy cultivation area and seed usage pattern. Thereafter, 5% of the total villages were selected randomly for the present study.

Selection of Respondents/Farmers

From each selected village, a list of all paddy growers was obtained from the Block Development Office (B.D.O). For sample selection, 10% of total farmers and seed-related stakeholders (farmers and input dealers) were randomly selected from each village.

The selected respondents were further classified into five groups based on farm size:

S. No.	Category	Farm Size
1	Marginal	Up to 1.0 hectare
2	Small	1.01 – 2.0 hectares
3	Semi-medium	2.01 – 4.0 hectares
4	Medium	4.01 – 10.0 hectares
5	Large	Above 10.0 hectares

Thus, a total of 120 respondents (farmers and seed-related stakeholders) were selected for the present study.

The primary data required for the study were collected through personal interviews using a pre-tested structured schedule. Information regarding socio-economic characteristics, marketing channels, marketing costs, marketing margins, and prices of hybrid wheat seeds was collected from the respondents for analysis.

Analysis of data/ analytical tools used

The present study titled “A Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh” was based on both primary and secondary data. The primary data were collected from farmers using hybrid paddy seeds, seed dealers, wholesalers, retailers, and other agro-input market intermediaries involved in the seed distribution system, while secondary data were obtained from published reports, records of the agriculture department, seed certification agencies, research publications, and relevant literature. The collected data were compiled, tabulated, and analyzed using suitable statistical tools such as averages, percentages,

and ratios. For examining the marketing of hybrid paddy seeds, indicators like marketing channels, availability of seeds, distribution pattern, pricing system, marketing costs, price variation, promotional activities, and constraints faced by farmers and seed sellers were used to assess the performance of the seed marketing system in the study area.

Analytical techniques employed

$$\text{Arithmetic Mean} = \text{AM} = \frac{1}{n} \sum_{i=1}^n a_i$$

Where, AM = Arithmetic Mean

n = Number of values

a_i = Data set values

Chi-Square Test

The Chi-Square Test as a goodness of fit has been used to analyse the magnitude of difference in opinion of respondents between observed outcome and the expected outcome under the assumption that it is equally distributed on a 5-point scale.

Formula used

Formula

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

χ^2 = chi squared

O_i = observed value

E_i = expected value

Tabular Presentation

Mapping of different marketing channels (Producer → Retailer → Consumer, Producer → Wholesaler → Retailer → Consumer, etc.).

Descriptive Analysis

Frequency and percentage of producers using each channel.

$$\text{Arithmetic Mean} = \frac{\sum Xi}{N}$$

Where,

$\sum Xi$ = Sum of variable

N = Total number of variables

Results and Discussion

The socio-economic characteristics of farmers influence the adoption, use, and marketing of hybrid paddy seeds. Factors such as age, education, family size, farming experience, landholding, and investment capacity affect farmers' purchasing and marketing behavior.

Therefore, the present study on "Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh" examined the socio-economic profile of respondents to understand their role in the adoption and marketing of hybrid paddy seeds in the study

Distribution of Respondents According to Farm Size and Age

S. No.	Category	Frequency	Percentage (%)
1	Marginal (<1 ha)	47	39.17
2	Small (1–2 ha)	32	26.67
3	Semi-medium (2–4 ha)	21	17.50
4	Medium (4–10 ha)	12	10.00
5	Large (>10 ha)	08	06.66
Total		120	100.00

Age-wise Distribution of Respondents

Age Group	Respondents	Percentage (%)
Young (20–35 years)	78	65.00
Middle (36–50 years)	30	25.00
Old (Above 50 years)	12	10.00
Total	120	100.00

Explanation

The table shows that most respondents belong to the marginal farm category and young age group. This indicates that small and young farmers are more actively involved in hybrid paddy seed cultivation and marketing.

Distribution of Respondents According to Education and Gender

Education Level	Respondents	Percentage (%)
Primary School	28	23.33
Junior High School	22	18.33
High School	15	12.50
Intermediate	10	08.33
Graduate	07	05.83
Illiterate	38	31.68
Total	120	100.00

Gender-wise Distribution

Gender	Respondents	Percentage (%)
Male	104	86.67
Female	16	13.33
Total	120	100.00

Explanation

The study reveals that most respondents are literate, though illiteracy still exists among farmers. Male respondents dominate hybrid paddy seed farming and marketing activities in the study area.

Distribution of Respondents According to Family Type and Annual Income

Family Type	Respondents	Percentage (%)
Nuclear	108	90.00
Joint	12	10.00
Total	120	100.00

Annual Income Distribution

Income Group (₹/Year)	Respondents	Percentage (%)
Below 1,00,000	46	41.67
1,00,001 – 2,50,000	42	37.50
2,50,001 – 5,00,000	20	13.33
Above 5,00,000	12	07.50
Total	120	100.00

Explanation

Most respondents belong to nuclear families. The majority of farmers fall under low to medium annual income groups, indicating limited economic capacity among respondents.

Preferred Marketing Channels of Hybrid Paddy Seeds

Sr. No.	Marketing Channel	No. of Respondents	Percentage (%)
1	Producer → Farmer	25	20.83
2	Producer → Dealer → Farmer	38	31.67
3	Producer → Distributor → Retailer → Farmer	57	47.50
Total		120	100.00

Explanation

The table indicates that Channel–III is the most preferred marketing channel among respondents. Farmers prefer wider distribution systems for better seed availability and accessibility.

Conclusion

The present study on the marketing of Hybrid Paddy Seeds (Pan MTU–7029, Mansuri Paddy) in Mirzapur district revealed that most respondents were marginal and small farmers, mainly belonging to the young age group. A large proportion of farmers were literate, male respondents dominated farming activities, and most families were nuclear in nature. The majority of farmers belonged to low and middle-income groups.

The study identified three marketing channels:

1. Producer → Consumer
2. Producer → Wholesaler → Consumer
3. Producer → Wholesaler → Retailer → Consumer

Among these, Channel–III was the most preferred due to better market access and wider distribution. However, Channel–I showed the highest marketing efficiency because of lower marketing cost and fewer intermediaries.

Major constraints faced by farmers included exploitation by middlemen, lack of market information, price fluctuations, inadequate financial support, high transportation cost, poor storage facilities, and limited awareness about modern marketing practices. The study suggests improving market infrastructure, extension services, and farmer awareness programs to strengthen the marketing system of hybrid paddy seeds in the study area.

Summary

The present study entitled “Study on Marketing of Hybrid Paddy Seeds in Mirzapur District of Uttar Pradesh” was conducted with 120 randomly selected respondents. The study revealed that the majority of farmers belonged to the marginal farm category, followed by small and semi-medium farmers. Most respondents were from the young age group and a large proportion of farmers were literate. Male farmers were mainly involved in hybrid paddy seed cultivation and marketing activities, while most respondents belonged to nuclear families.

The study further showed that the majority of respondents had annual income below ₹1 lakh, indicating low economic

status of farmers in the study area.

Three marketing channels were identified in the marketing of Hybrid Paddy Seeds (MTU–7029 Mansuri Paddy):

1. Producer → Farmer
2. Producer → Dealer → Farmer
3. Producer → Distributor → Retailer → Farmer

Among these, Channel–III was the most preferred channel by respondents.

The study also revealed that Channel–I had the highest marketing efficiency compared to Channel–II and Channel–III. Major constraints faced by farmers included high seed prices, exploitation by middlemen, lack of technical knowledge, price fluctuations, inadequate availability of certified seeds, poor storage facilities, and limited financial support. The study suggests the need for better extension services, improved seed distribution systems, and financial assistance to farmers.

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