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## Study about marketing of hybrid maize seed (Vnr4226) in Singrauli District (M.P.)

**Lokesh Kumare, Nitin Barker, Jayant Zechariah and Dr. Anupriya Paul**

### Abstract

The principal purpose of this research is to identify the prospects & challenges of private sectors in hybrid maize seed production and marketing and suggest practical solutions to improve the efficiency of seed provision in Ethiopia. In this research primary and secondary data collection methods were applied, document reviewed, survey carried on selected seed companies, key informants' interviews and focus group discussion in major regions had been carried out. The research study revealed that policy environment (investment incentives, tax exemption) seed production and quality control (EGS, knowledge and skill, access to land), market and distribution (price, unhealthy competition with public seed enterprises) and inadequate administration support are the key constraints to the private sector. The findings further revealed that the centralized Public seed enterprises cannot meet the supply of quality and quantity hybrid maize seed demanded by farmers thus participation of private sector is crucial. The study recommended the need for improvement in the Development of a clear policy and directives on variety development and release, Expand the quality EGS access, reduce seed production constraints, Improve Seed certification and quality control, explore more effective marketing and distribution models, improve Access to capital, Build knowledge and skill of private seed companies.

**Keywords:** Hybrid maize seed, seed production, seed marketing, seed system, early generation

### Introduction

Maize hybrid seed provides farmers with varieties containing improved genetics, such as high yield potential and unique trait combinations to counter diseases and adverse growing conditions.... Hybrid maize seed production involves deliberately crossing a female parent population with a male parent in isolated fields.

Hybrid maize, also known as hybrid corn, is an agricultural product created by cross pollinating different inbred lines of maize. It accounts for more than 90% of all maize grown in the United States due to its large size and uniform appearance. The processes used to interbreed plants were first understood and documented by Gregor J Mendel in the 1860s, but were not widely applied to agriculture until the 1930s. Prior to the discovery of hybrid maize, traditional maize breeding was very simplistic. Farmers would select a group of maize plants that shared a desirable characteristic, such as disease resistance, large size, height, rapid growth, or appearance, and then try to amplify those traits by planting those plants together and allowing them to breed. Accidental pollination was very common, so the initial plants in the group were not always only the ones that farmers had selected. Over the course of several generations of inbreeding, this group of plants would become a strain, sharing similar genetic makeup as well as physical traits. In 1908, a researcher discovered that if he took two inbred strains and interbred them, the resulting hybrid maize was a much larger and hardier plant than either of the inbred lines had ever produced. The agricultural implications were staggering, and farmers could suddenly produce much more corn than they had been able to produce before. Later, another researcher improved the process of interbreeding by suggesting that two hybrids could further be crossbred to produce a plant with high production and a high percentage of viable seeds. This type of hybrid became known as a four way cross. Four way crosses were difficult to develop, however, because for any four inbred strains there were numerous possible ways to combine them, each of which had to be grown and compared to the others in order to select the most productive and viable.

The main disadvantage to growing hybrid maize would not be discovered until many years later, when farmers discovered that uniform appearance carried with it a dangerous genetic uniformity. The more effort farmers put into making sure that the plants all looked the same, the more genetically alike they made them.

Double crossing the lines prevented many of the disadvantages created by traditional inbreeding, but it massively increased susceptibility to disease. Without genetic diversity to protect a crop of hybrid maize, a single pathogen could spread through a field, moving from plant to plant, infecting everything. Modern hybrid maize counters this problem by crossbreeding hybrid lines with open pollinated maize to produce varieties that have specific traits but maintain some degree of genetic diversity.

**Research methodology**

Research methodology is the systematic way to do a research. It is a science of studying and how research is to be carried further. Essentially, The procedures by which research go forward for their work of the describing, explaining and predicting phenomena is called research methodology. This chapter explicates and the research design of the study, introduces factor and variables included, sample size and statistical tools which are used for analysis in the study.

**Selection of district**

Singrauli district of Madhya Pradesh was selected for the study. Madhya Pradesh comprises of 52 district out of which Singrauli district is selected purposely for the research work

**Selection on block**

There are a total 3 block in Singrauli district, out of which 1 block name Waidhan block was s purposively Selected for the study on the basis on maximum number of hybrid maize seed of VNR Seeds Pvt. Ltd.

**Selection of village**

There are total 215 village present in Waidhan development block. 5% of villagers from this blocks was selected randomly for present the study.

**Selection of respondents**

- Marginal farmer- Size 1 hectare or less
- Small farmer - Size 1 to 2 hectare
- Semi Medium - Size 2 to 4 hectare
- Medium farmer - Size 4 to 10 hectare
- Large farmer - Size above 10 hectare

Out of total respondents 10% of farmers were selected randomly from the entire different size group.

**Data collection**

For the study, both primary and secondary data will be collected from different sources.

**Primary data**

The data on production and marketing aspect will collect on well-structured schedule prepare in advanced and data collection will be done using survey method. Several visit will be help to collect correct information.

**Secondary data**

The secondary information will collect from the published sources available block head quarter and marketing office head quarter.

**Tools of Analysis**

The collected data were analyzed with reference to the

objectives set forth for the study. The analytical techniques employed in this study are explained.

**Standard deviation**

It is the degree of dispersion or the scatter of the data points relative to its mean, in descriptive statistics. It tells how the values are spread across the data sample and it is the measure of the variation of the data points from the mean. The standard deviation of a sample, statistical population, random variable, data set, or probability distribution is the square root of its variance. The population standard deviation formula is given as:

$$s = \sqrt{\frac{\sum(x - \bar{x})^2}{n - 1}}$$

Here,  
 $\sigma$  = Population standard deviation  
 $\mu$  = Assumed mean

**Marketing Efficiency**

Marketing Efficiency Marketing efficiency is the degree of market performance. It is the ratio of market output to market input.

Marketing efficiency = Output /Input

**Marketing Cost**

Cost of marketing the total cost incurred on marketing by various intermediaries involved in the sale and purchase of the commodity till it reaches the ultimate consumer was computed as follow.

$C=C_f+C_{m1}+C_{m2}+C_{m3} +.....+C_{mn}$   
 Where C= Total cost of marketing

$C_f$ = Cost borne by the producer farmer from the produce leaves the farm till the sale of the produce, and  $C_{mn}$ = Cost incurred by the middlemen in the process of buying and selling.

**Marketing Margin**

Marketing Margin of Middlemen:(a) Absolute margin =  $PR_i - (P_{pi} + C_{mi})$ (b) Per cent margin =  $\frac{PR_i - (P_{pi} + C_{mi})}{PR_i} \times 100$  Where,  $PR_i$ = Total value of receipts  $P_{pi}$ = Total purchase value of goods (purchase price) and  $C_{mi}$ = Cost incurred in Marketing.

**Price Spread**

Price Spread is defining as the difference between the price paid by consumer and the net price by the producer for an equivalent quantity of farm produce.

It is expressed as percentage of consumer's price

$$\text{Price Spread} = \frac{(\text{Consumer price} - \text{Net price of producer})}{\text{Consumer price}} \times 100$$

**Objective of the study**

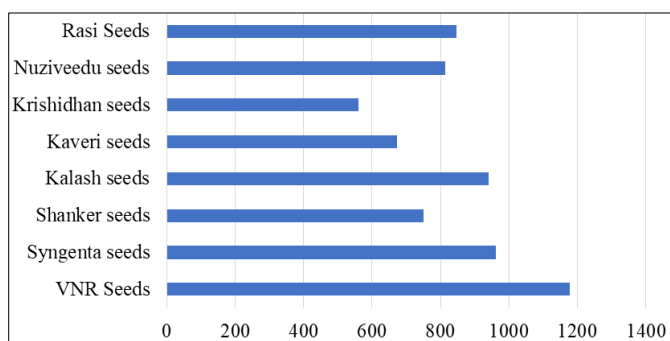
To study the market share of hybrid maize seed in singrauli district

**Table 1:** Market share of Various Maize seed

S. No.	Insecticide Brand Name	Total sales in number	Percentage
1	VNR Seeds	1179	18%
2	Syngenta seeds	962	14%
3	Shanker seeds	751	11%
4	Kalash seeds	941	14%
5	Kaveri seeds	673	10%
6	Krishidhan seeds	561	8%
7	Nuziveedu seeds	814	12%
8	Rasi Seeds	847	13%
	Total	6728	100%

(Source: Researcher’s computation from field data)

Table 1 reveals about the market share of various seed companies in the study area in which 18% of the respondents responded for VNR seeds followed by 14% for syngenta seeds, 11% for Shanker seeds, 14% for Kalash seeds, 10% for Kaveri seeds, 8% for Krishidhan seeds, 12% for Nuziveedu seeds and 13% for seeds Rasi seeds.



**Fig 1:** Market share of Maize Seed Brands

**Marketing channels for Maize seeds**

**Channel 1**



In the Channel 1, Company manufactures the seeds and supplies to Wholesaler which is distributed to Retailer and farmer buys it from retailer.

**Channel 2**



In the Channel 2, company manufactures the seeds and supplies it to Wholesaler and farmers buys seeds directly from wholesale.

**Channel 3**



**Conclusion**

World production of white maize is estimated to amount to about 65 to 70 million tons, relatively small compared to the annual output of around 500 million tons of yellow maize. However, white maize is almost exclusively grown for human consumption and is of paramount significance to nutrition and food security in a number of developing countries, especially in Africa. The volume of white maize traded internationally,

estimated on average at 1.5-2.0 million tons per year, is dwarfed by shipments of yellow maize, which averaged some 60 million tons in recent years, mainly destined for use as animal feed. Market prices are usually slightly higher for white maize compared to the yellow type, although price margins can vary substantially depending on the overall supply and demand situation.

The primary policy objective for almost all white maize producing countries is to satisfy national requirements from domestic production. Exports in most cases are a result of excess production in years of favourable weather and of domestic stocks exceeding levels deemed necessary for food security purposes. In order to maintain a high degree of self-sufficiency, many potential exporting countries applied policies aimed at keeping minimum producer prices relatively high, which compromised their competitive position on the international market. In addition, white maize from southern and eastern Africa, the principal producing and consuming areas, face long distances between major production areas and ocean ports which contribute to high transport costs in many cases. As a result, when surpluses did occur, they could only be exported in years of high prices without incurring losses. This situation has resulted in several countries being competitive only in swap arrangements or triangular transactions for deliveries to neighbouring countries.

Recent efforts to deregulate national cereal sectors and to enhance market liberalization may have significant effects on the future supply and demand situation for white maize. White maize production in developing countries is expected to grow at a rate of 3.3 percent per annum between 1987-89 and 2000, but these rates of growth depend upon continued expansion of production in sub-Saharan Africa. In some countries in the region where area growth is no longer a major component of expanding production, it is unclear if yield increases will be forthcoming to sustain these relatively high predicted growth rates in production.

The international market, being primarily supplied by southern Africa and the United States, is expected to continue to be volatile in the future. Supplies will depend on the export availabilities of a few producers and most countries will continue to import only in years of inadequate domestic supplies occasioned by crop shortfalls.

In maize research for developing countries, improvement of white-grained varieties and hybrids has been greater than in developed countries, where nearly all plant breeding research has focused on yellow maize. Nonetheless, in many countries where white maize is important, adoption of improved material has been slow and limited. One of the major constraints is the development of seed systems that adequately serve small farmers. Crop management research that solves the problems of soil fertility and unpredictable rainfall will also be crucial to continued growth in white maize production. Particularly in sub-Saharan Africa, policy changes as well as institutional and technical advances are required if white maize is to continue to meet the food needs of a rapidly growing population.

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