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A Study on Hybrid Vegetable Seed Purchasing Preference by Farmers of Jammu District

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ABSTRACT

Seed is the most fundamental and important ingredient for long-term agriculture. All other inputs respond to seed quality to a considerable amount, and it is believed that quality seed alone contributes 15–20 percent to overall yield, depending on the crop, and that this may be increased to 45 percent with efficient management of other inputs. The Present study is aimed to evaluate the effects of Educational qualification for cultivation of hybrid vegetable crops in Jammu district. For study, questionnaires were prepared to collect primary data from farmers. For interviewing, the respondents i.e. 40 farmers were selected. Hence, the empirical results and findings are discussed in this study.

Keywords: Educational qualification of farmers, hybrid vegetable, hybrid cabbage, hybrid raddish

Seed is the most fundamental and important ingredient for long-term agriculture. As a result, our primary concern and emphasis is on producing high-quality seed that allows us to extract more and more from less and less. All other inputs respond to seed quality to a considerable amount, and it is believed that quality seed alone contributes 15–20 percent to overall yield, depending on the crop, and that this may be increased to 45 percent with efficient management of other inputs. In the previous three decades, the government has taken a number of innovative and reformative initiatives to help the country's seed industry flourish. Agriculture is the economic backbone of rural areas. India's agriculture has grown significantly, and we are on the verge of a second green revolution thanks to contemporary agricultural technologies. A good grade seed is the most fundamental and important ingredient for sustainable agriculture. In the world, Indian seed industry is one of the most developed and vibrant, currently ranking sixth with revenue of about 9000 crores. The Indian Seed Industry has grown at a CAGR of 12 percent over the last five years, compared to a global growth rate of 6-7 percent. Increased use of *Bt* cotton hybrids, single cross corn hybrids, and hybrid vegetables has resulted in significant value growth. Increased Seed replacement rate in crops like paddy and wheat has accounted for the majority of the volume increases. The Indian seed business is changing dramatically, with private seed companies playing a major role, international seed companies entering the market, Indian enterprises forming joint ventures with multinational seed companies, and consolidations. For the next four years, Indian

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seed industry is expected to develop at a CAGR of 17pecent (Singh Jogendra *et al.* 2019).

Indian seeds market

From 2011 to 2018, the Indian seed market was expected to be valued 4.1 billion dollars, with a compound annual growth rate of 15.7 percent. From 2019 to 2024, it is expected to grow at a CAGR of 13.6 percent, culminating in a market value of $9.1 billion. India's seed business is experiencing new ideal models of growth and improvement, thanks to rising local interest and demand for high-quality seeds in various far-flung nations, particularly in Southeast Asia. The seed's image in India has changed over time. Indian agriculture formerly relied on seeds left over from earlier harvests. The most radical seeds created by seed groups are already invading ranchers' crops. The wonder has established itself amid the ever-changing aspects of horticulture in India and throughout the world (Indiaeconomicstrategy.dfat.gov.au).

The Indian seed industry has grown rapidly and should continue to do so, allowing agriculture production to expand even further. The seed industry's role is to create a sufficient number of high-quality seeds while simultaneously achieving varietal variety. As Indian lifestyles and diets improve, companies that develop, manufacture, and market seeds will prosper. Farmers now have money in their hands and want to spend it on seeds that yield quicker, better harvests from the same kerchief-sized plots. With rising vegetable consumption, vegetable farmers and producers anticipate a brighter future. However, this increased output must be done with current or reduced land, water, labor, and other inputs, all while minimizing environmental impact. Among the few options for increasing vegetable production and productivity, the adoption of excellent quality seeds looks to be a realistic and easily adopted alternative for meeting future requirements. The number of players in the vegetable seed business is gradually increasing as they see a brighter future. The number of participants in the vegetable seed sector is progressively rising as they perceive a brighter future. Maintaining a consistent supply and distribution network of high-quality seeds is critical for achieving success in this competitive environment. With the aid of a distribution network analysis of hybrid vegetable seeds, a firm may determine its strengths and weaknesses, allowing it to capitalize on its strengths while overcoming its weaknesses.

India hybrids vegetable seeds market

Vegetable hybridization-driven increase was considerable in the previous decade. Hybrid vegetable output has increased from 88.62 million metric tons in 2001-02 to 178.17 million metric tons in 2016-17. Tomatoes, okra, and gourds, for example, accounted for a substantial percentage of the country's overall hybrid vegetable seed value in 2018, accounting for 9 percent, 15 percent, and 11 percent, respectively. In the same year, vegetable hybrid seeds were valued at USD 397.21 million. Furthermore, the Indian government is promoting the use of hybrid seeds in vegetable production by assuring the availability of high-quality seeds, bridging the knowledge gap among farmers about improved practices, and creating supportive infrastructure in the nation. As a result, government assistance in the form of different policies and product launches by industry participants are expected to boost market growth over the forecast period (Globenews wire. com).

REVIEW OF LITERATURE

Bano and Sharma (2017) *Momordica charantia*, a large economically important pocket, represents two types namely. Plant variety charantia and wild variety muricata. Both species are similar in the whole morphology except for small var. vines. The muricata bears small leaves, flowers and fruits that have a sweet and savory taste and are much more nutritious than those found in var. *charantia*. In addition, the two species are closely related to having multiple pollen mother cells with 22 chromosomes linked as 11 bivalents, and fewer cells with 20-24 chromosomes. Therefore, Ummyiah *et al.* (2017) India has a wide range of agricultural conditions, but vegetable cultivation is limited to regional and annual needs only. Although production has risen to the level of 113.5 million tons from an area of 7.2 million hectares, the technology used and practices are largely traditional, resulting in low production and quality that does not match the size of the product. In the Himalayan mountains, there are

cold desert climates where temperatures are very low (-5 to 3°C) during the winter and many regions remain cut off from the rest of the country from November to March due to heavy snow. For this reason, people in these areas are experiencing severe winter shortages of vegetables. Sometimes in winter, vegetables are airlifted to Srinagar and Laddakh and the cost of these vegetables is higher than the average person while as Mansoor *et al.* (2019) this study was conducted by Krashi Vigyan Kendra, Kargil in the province of Jammu and Kashmir to identify gaps in the use of high-yield vegetable varieties in Front Line exhibitions and farmer practices. The protests were carried out on three types of vegetables namely Arkel (Pea), Red Coral (onions) and Mitra (Cabbage) from 2013-14 to 2015-16. The results show that the adoption of high yielding vegetable varieties has increased the production of vegetables in the region. Other returns from more productive varieties were indicating a sufficient size for vegetable growers in the region.

Selvakumar *et al.* (2019) protected cultivation of horticultural plants includes adaptation to the small climate of the plant in order to grow and develop outside of its normal season. Depending on the need and resources, this trick can be partial or complete. Protected farming practices at all levels of vegetable production around the world can be at home, community or business level. It helps the farmer to produce crops slowly and in some cases too early or too late in relation to the natural time of their production. This change in production time increases the chances of fetching large premiums in the market because the product protects glut time and in some cases holds less time. Cornejo *et al.* (2007) a study was conducted in the 'Huerta de Valencia' area of 'Comunidad Valenciana' to examine the genetic variants of traditional tomato varieties, as an example of a process affecting vegetable crops in Europe. The urbanization of agricultural land, agricultural change, low farm profitability, the age of farmers, the transformation of vegetable gardens and other diseases and disease-related diseases have been identified as major factors affecting genetic erosion in this analysis similarly, Peña and Hughes (2007) the institute has made significant contributions to the development of Chinese tomato and cabbage varieties that tolerate heat and subsequent extraction of flexible, tropical varieties worldwide. The key to achieving high yields with heat-resistant plants is crossing genes into heat-tolerant genes and disease-resistant or winter-resistant species. Muhammad *et al.* (2021) temperate varieties of cause severe crop losses in vegetable crops in Azad Jammu and Kashmir. A detailed field survey was conducted in the vegetable production district of Sudhnuti district to measure the incidence and collection of vegetables targeted at RKN. A total of 65 sites were visited during the study, 47 sites were found to have 72% cases and a maximum weight of 2-8 points. Eggplant, tomato, cucumber, okra, beans, cucurbits, and peppers are considered local vegetables. Therefore, Parmanik *et al*. (2021) authorize the adoption of a protected plant as the end of all these difficulties. In recent days, protected or hot-growing cultivation of high value vegetables such as capsicum especially during the offseason has proven an increasing trend among small and low-scale farmers because it has a high value and low volume crop and produces high yields in many high quality areas.

OBJECTIVES OF THE STUDY

To explore hybrid vegetable seed purchasing preference by farmers of Jammu district.

MATERIALS AND METHODS

In order to ensure that the researcher responds to the research problem, a detailed description of the procedures and methods used to carry out the research is explained systematically. This portion provides descriptions of study design, sampling technique, variables and their analytical estimation, data collection instruments, data collection methods employed and statistical tests used to analyze data.

Geographic location

The present study is carried in Jammu district of Jammu and Kashmir, the sampling design adopted in the study was Stratified random sampling technique.

Sampling Design

Stratified sampling is based on grouping units into subpopulations called strata and then using a hierarchical structure of units within each stratum.

Survey Instrument and Data collection

The present study utilizes primary data for addressing the specific objectives of the study. The primary data for the present study were collected through questionnaire, containing general demographic data, education level and information concerning income and growth expectations.

RESULTS AND DISCUSSION

Age of the farmers

Table 1 represent age of the farmers. Out of 40 farmers, 8 farmers under the age group of 30 - 41 years, there were 26 farmers with followed by the age group of 42 – 67 years and there were 6 farmers with followed by the age group of 68 years with maximum.

Table 1: Most preferred radish hybrid vegetable seeds used by the farmers

Name of Companies (n=40)	Number of Farmers	Percentage
Asia Seed	6	15.00
Beej Sheetal	2	5.00
Crystal	4	10.00
Sakata	7	17.50
Syngenta	16	40.00
Taki Seed	5	12.50
Total	**40**	**100.00**

Most preferred radish hybrid vegetable seeds used by the farmers

Table 1 represent farmers most preferred radish hybrid vegetable seed. Out of 40 farmers, there were 16 farmers who most preferred use hybrid vegetable seed of Syngenta company, 7 farmers said that they most preferred use hybrid vegetable seed of Sakata company, 6 farmers said that they most preferred use hybrid vegetable seed of Asia Seed co. ltd company, 5 farmers said that they most preferred use hybrid vegetable seed of Taki Seed company, 4 farmers said that they use hybrid vegetable seed of Crystal company and 2 farmers said that they use of hybrid vegetable seed of Beej Sheetal company.

Table 2 revealed that Weight age average technique for criteria while purchasing cabbage seed from the retailers. The study concluded in terms of the quality of seed ranks number 1st, followed by yield, past experience, Fellow farmers opinion, Dealer advice, Brand name of seed, Cost of seed 2nd, 3rd, 4th, 5th, 6th and 7th positions respectively.

Most preferred cabbage hybrid vegetable used by the farmers

Table 2 represent the farmers who were using most preferred of cabbage hybrid vegetable seeds. Out of 40 farmers, 11 farmers said that they most preferred hybrid vegetable seed of Sakata company, 7 farmers said that they most preferred use hybrid vegetable seed of Seminis company, 6 farmers said that they most preferred use hybrid vegetable seed of Syngenta company, 5 farmers said that they most preferred use hybrid vegetable seed of Golden Seed company, 4 farmers said that they most preferred use hybrid vegetable seed of Amazon company, 4 farmers said that they most preferred use hybrid vegetable seed of Vashudha company and only 3 farmers said that they use hybrid vegetable seed of Crystal company.

Table 2: Most preferred cabbage hybrid vegetable seeds used by the farmers

Name Companies (n=40)	Number of Farmers	Percentage
Amazon	4	10.00
Crystal	3	7.50
Golden Seed	5	12.50
Seminis	7	17.50
Syngenta	6	15.00
Sakata	11	27.50
Vashudha	4	10.00
Total	**40**	**100.00**

FINDINGS

It is found that out of 40 farmers, 11 farmers most preferred hybrid vegetable cabbage seed of Sakata company, 7 farmers preferred hybrid vegetable cabbage seed of Seminis company, 6 farmers preferred hybrid cabbage vegetable seed of Syngenta company, 5 farmers preferred hybrid

cabbage vegetable seed of Golden Seed company, 4 farmers preferred hybrid cabbage vegetable seed of Amazon company, 4 farmers preferred hybrid cabbage vegetable seed of Vashudha company and only 3 farmers use hybrid cabbage vegetable seed of Crystal company.

There were 16 farmers who most preferred use of hybrid radish vegetable seed of Syngenta company, 7 farmers most preferred hybrid radish vegetable seed of Sakata company, 6 farmers preferred hybrid radish vegetable seed of Asia Seed co. ltd company, 5 farmers preferred hybrid radish vegetable seed of Taki Seed company, 4 farmers use hybrid radish vegetable seed of Crystal company and 2 farmers use hybrid radish vegetable seed of Beej Sheetal company.

CONCLUSION

Seed is the most fundamental and important ingredient for long-term agriculture. All other inputs respond to seed quality to a considerable amount, and it is believed that quality seed alone contributes to overall yield, depending on the crop, and that this may be increased with efficient management of other inputs. In this study it is found that maximum farmers were marginal farmers who were cultivating radish in their farms but only 35 percent of them are using hybrid seed for cultivation of hybrid vegetables had same were found in case of hybrid cabbage cultivation more land were found under cabbage vegetable crops but minimum farmers were using hybrid cabbage seeds and cultivating hybrid cabbage vegetables.

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