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Study on adoption behaviour of improved onion production technology of onion grower in Bharuch district in Gujarat

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Abstract

Bharuch district in Gujarat is one of the important areas for vegetables farming with great potential for onion production. In district 89 ha areas in onion cultivation and 1686 MT production in district. It was found that the majority of the farmers are still covering behind the adoption of improved onion production technology in the area. It thus, becomes necessary to assess the adoption behaviour of onion growers; towards improved onion production technology therefore the 120 farmers were selected using proportionate allocation method from small, medium and large farmers. This study depicted that majority of the onion growers 37.05 percent were found to have medium adoption behaviour of overall technology followed by high adoption behaviour 35.83 percent and low adoption behaviour 26.66 percent in respect of overall onion production technology respectively.

Keywords: Onion growers, behaviour, Bharuch

Introduction

There are more than 12 lakh hectares of land under agriculture. About 25 percent of the world's supply of onions, or 26.83 million MT, is produced in the nation. Maharashtra, Madhya Pradesh, Karnataka, Rajasthan, Gujarat, Bihar, Andhra Pradesh, Haryana, West Bengal, and Uttar Pradesh are the top onion-producing states in the nation. Nearly 90 percent of the nation's total onion production is produced in these three states, (Agriculture and Farmer Welfare, 2019). More than 57260 hectares are under cultivation, and Gujarat produces 1.422 million tonnes overall (2019-20). After Rajasthan, Madhya Pradesh, Karnataka, and Maharashtra, Gujarat comes fifth in terms of production. Bhavnagar, Amreli, Rajkot, Junagadh, Jamnagar, Kutch, Porbandar, Dahod, Surendranagar, Anand, and Mehsana are the principal onion-growing regions of Gujarat. At the state level, the GWO-1 variety was released in 2000, (Director of Horticulture, 2020-21)

Since 1994, Krishi Vigyan Kendra has been operating in the Bharuch district. The KVK is approved by the BAIF and implemented by the ICAR (Indian Council of Agricultural Research). Technology transfer through on- and off-campus training programmes for farmers and extension agents, as well as front-line demonstration. Krishi Vigyan Kendra's mandated activity is front line demonstration approved by the Agricultural Technology Application Research Institutes (ATARI) Pune. KVK Bharuch conduct demonstration in

Bharuch district, for this KVK Bharuch felt it Necessary to study the behaviour of Improved Onion Production Technology of Onion grower in the district.

Objective

To measure the adoption behaviour of onion growers towards improved production technology.

Methodology

The data was collected with the help of interview schedule, which was prepared on the basis of objectives of the study. For the convenience of data collection, the interview schedule was prepared in Gujarati language. Before the actual collection of the data the interview schedule was subjected to pre-testing. The data was collected personally by the researcher through a well structured and pre-tested interview schedule. There researcher personally met the respondents and explained to them about the purpose of the study. After establishing rapport with the respondents they were interviewed and their responses recorded in the interview schedule. Multi stage sampling technique was used for selection of block in the district, villages in the selected block and onion growers in the selected villages. From the list of onion growers of selected five villages was prepared. These farmers were categorized into 3 size groups i.e. small farmers (<2 ha.), medium farmers (2.1-4.00 ha.) and large farmers (>4.1 ha). From this list 120 onion

growers were selected randomly using proportional allocation. Adoption behaviour of onion growers:- The extent of adoption of onion production technology refers to the extent of adoption of recommended and improved onion production techniques and practices by onion growers on their farm. Extent of adoption of onion production technology was measured with the help of index developed as per schedule. Over all 12 components of onion production technology was included in the schedule to test the adoption behaviour of onion growers. The answers elicited from the farmers was compared with correct answer and quantified by giving "1" score for adoption and "0" for non adoption. Based on the total scores, the respondents were grouped in to three categories as low, medium and high by using mean and standard deviation as a measure of check. Finally this raw adoption score obtained by individual respondent was converted into adoption index as below:

$$\text{Adoption index} = \frac{\text{Sum of the adoption scores obtained by respondent}}{\text{Sum of obtainable adoption score}} \times 100$$

Result & Discussion-Adoption behavior of onion growers.
Adoption behaviour tends to be specific to particular innovation, individuals, and environment. Farmer's incentives and disincentives to adopt particular technology

are determined by his personal belief about its value and permissiveness of his environment. So adoption of an innovation varies not only from area to area but also from farmer to farmer with their socio-personal, economic and psychological characteristics. At earlier the socio economic and psychological characteristics of onion growers are discussed and in present section the adoption behaviour of onion growers towards improved production technology is described. With the recommendation of improved onion production technology a great emphasis is being paid by both the scientists and extension workers to boost up onion production. The various experimentation and researches have predicted means and measures for high production of onion at field level. The efficient use of recommended technology to their preferences undoubtedly will able the potential users to enhance the onion production, which in turn could improve the economic status of the onion growers. This seems possible only when the onion growers adopt the recommended onion production technology according to their preferences. The adoption pattern of onion growers towards improved onion production technology was presented in table.1

Results & Discussion

Table 1: Adoption behaviour of extant of adoption onion growers towards improved production technology, (n=120)

S. No.	Practices	Frequency of adoption	Percentage to total	Rank
1	Method of field preparation	103	85.83	I st
2	Method of nursery management	97	80.33	III rd
3	Variety/Hybrid	95	79.16	IV th
4	Seed rate	94	78.33	V th
5	Seed treatment	93	77.05	VI th
6	Method of transplanting	85	70.83	IX th
7	FYM/Bio fertilizer application	88	73.33	VIII th
8	Fertilizers (NPK)	92	76.66	VII th
9	Intercultural operations	94	78.33	V th
10	Irrigation	101	84.16	II nd
11	Plant Protection Measures	97	80.83	III rd
12	Proper method of digging	92	76.66	VII th
13		94.25	78.45	

The data given in the table showed that, on an average 78.49 percent recommended onion production technology was adopted by onion growers in study area. Study also assessed the frequency of adoption of onion growers about the each components of onion production technology. There were 12 components of onion production technology considered in study and the onion growers were assessed as per their adoption behaviour in respect to each component of onion production technology. It is evident from the data that the adoption level of onion growers on the basis of total score obtained by them was found to "method of field preparation" (rank Ist) adopted by 85.83 percent onion growers followed by "irrigation" (rank IInd) adopted by 84.16 percent onion growers, "Method of Nursery Management" and "Plant protection measures" (rank IIIrd) adopted by 80.33 percent onion growers, "Variety Hybrid" (rank IVth) adopted by 79.16 percent onion growers, "seed rate" and "Intercultural operations" (rank Vth each) adopted by 78.33 percent onion growers, "seed treatment" (rank VIth each) adopted by 77.05 percent onion growers,

"fertilizer NPK" and Proper method of digging (rank VIIth) adopted by 76.66 percent onion growers, "FYM/Bio fertilizer application" (rank VIIIth each) adopted by 73.33 percent onion growers and "method of transplanting" (rank IXth) adopted by 70.83 percent onion growers respectively. It is pertinent to have an idea to assess the aggregate adoption level of onion growers in respect of onion production technology on their farm that would be showed the total picture of adoption behaviour. Hence, it is calculated and the distribution of onion growers have been made according to their extent of adoption regarding overall onion production technology as aggregate was presented in table below

Table 2: Distribution of onion growers according to overall onion production technology, n:120

S. N.	Categories	Frequency	Percentage
1	Low	32	26.66
2	Medium	45	37.05
3	High	43	35.83
	Total	120	

The data presented in table showed that majority of the onion growers 37.05 percent found to medium Adoption behaviour of overall technology followed by high adoption behaviour 35.83 percent and low adoption behaviour 26.66 percent in respect of overall onion production technology

respectively. Thus, it can be concluded that in study area, most of the onion growers were found to medium adoption behaviour of overall technology of onion production followed by high and low adoption.

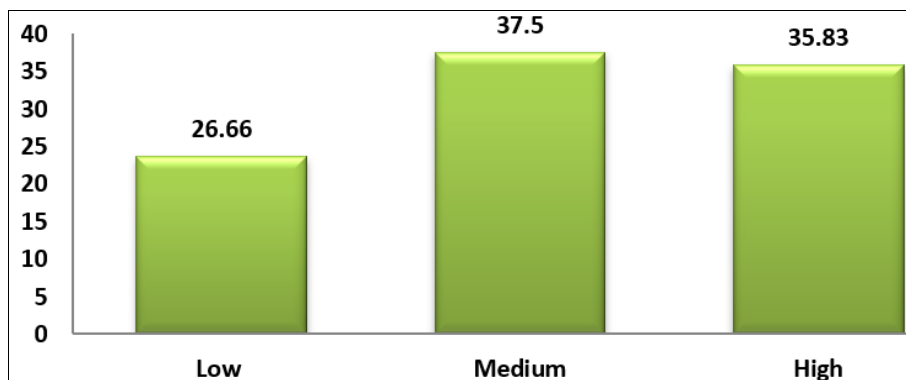


Fig 1: Distribution of onion growers according to overall onion production technology

Adoption behavior of onion growers towards improved production technology

It can be clear from the result of the study that the most of the onion growers were found to have Medium adoption behavior of overall technology of onion production followed by high and low adoption. The situation revealed that the respondents were average in adoption of improved onion production technology. This might be due to the fact that, onion growers had the tendency towards indiscriminate use of inputs inefficiently, lack of technical skill and lack of faith in result of these improved practices and technology. The prime reason for medium adoption of onion production technology was also high cost of inputs and uncertainty in market return. This finding is in conformity with the findings as reported by Solanki (2009) ^[3] and Agarwal (2013) ^[2].

Conclusion

The majority of onion growers in Bharuch district exhibit medium adoption behaviour towards improved onion production technology, with 37.05% falling into this category. About 35.83% demonstrate high adoption, and 26.66% show low adoption. This indicates that while there is some progress, further efforts are needed to enhance adoption, especially considering challenges like high input costs and market uncertainty. The findings suggest a need for targeted training and support to improve the adoption of recommended practices for better onion production outcomes in the district.

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