

KNOWLEDGE AND ADOPTION OF BRINJAL GROWERS ABOUT RECOMMENDED CULTIVATION PRACTICES IN AKOLA DISTRICT

Rajina Potsangbam¹, N. M. Kale² & N. P. Jangwad³

*¹Ex. PG Student, Department of Extension Education, Dr. Panjabrao Deshmukh Krishi Vidyapeeth,
University of Akola, Maharashtra, India*

*²Professor, Department of Extension Education, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, University of Akola,
Maharashtra, India*

*³Assistant Professor, Department of Extension Education, Dr. Panjabrao Deshmukh Krishi Vidyapeeth,
University of Akola, Maharashtra, India*

ABSTRACT

This Study was conducted in Akola district of Maharashtra during 2016-17. With the help of random sampling method, 120 brinjal growers were selected and data were collected by personal interview method by using pre-tested interview schedule. The results regarding overall knowledge level of brinjal growers about recommended cultivation practices it was observed that all the selected brinjal growers were observed in high knowledge level category about the cultivation practices of brinjal. The probable reason might be the interest in knowing about the recommended cultivation practices in brinjal and their eagerness to learn about new knowledge or technology which is related to brinjal cultivation. Whereas the results regarding the adoption of the recommended cultivation practices by the brinjal growers revealed that maximum numbers (90.83%) of the respondents were observed in high level of adoption category. The region might be that brinjal is the cash vegetable crop and a brinjal grower gets the cash after every harvest of the brinjal crop.

KEYWORDS: Knowledge, Adoption, Brinjal

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INTRODUCTION

Agriculture sector in India employs about 58% (Dec 2016) of the workforce, contributes 16% of GDP (2015-16). Presently horticulture has established its credibility in improving income through increased productivity, generating employment and in enhancing exports. Resultantly, horticulture has moved from rural confined to becoming a commercial venture. The scenario of horticulture crops in India has become very encouraging. The percentage share of horticulture output in agriculture has become more than 30%. Under the preview of agriculture and allied activities, the share of the plan outlay for horticulture which was 3.9% during Ninth Five Year Plan has increased to 4.6% during Twelfth Five Year Plan.

Vegetable crops provide an important source of income for the small and marginal farmers of our country. The increasing population, urbanization and the rising incomes have given great impetus to the cultivation of vegetable crops which form an important source of minerals. Particularly, proteins, calcium, magnesium, iron, vitamins like

A, B-complex and C and fiber, micronutrients, antioxidants and photochemical in the largely vegetable diet of our people and demand of vegetable is increased. Apart from nutrition, they also contain a wide array of potential photo-chemicals in our daily diets like anti-carcinogenic principles and anti-oxidants (e.g. flavonoids, glucosinolates and isothiocyanates). There is a great need today to enhance the per hectare productivity gradually to boost the vegetable production. In India, vegetables are valuable biological assets especially genetic resource. India is rich in biodiversity of vegetables and is the primary/secondary center of origin of many vegetables.

Brinjal is a rich source of protective nutrients i.e. calcium, phosphorous, carbohydrates, dietary fibers, iron and vitamin A and B. It is widely consumed in various culinary preparations. The tender fruits are primarily used for cooked vegetables for the preparation of various dishes in a different part of the world. It is also used for making pickles and dehydrated products. It has medicinal properties; fruits are an excellent remedy for those suffering from liver troubles (Chauhan, 1981) and high blood cholesterol (Singh and Kalda, 2001). Piercing fruits with a needle and fried in sesame oil is a remedy for a toothache (Nandkarni, 1927). White brinjals are said to be a remedy for diabetic patients (Choudhary, 1976).

In India, brinjal occupies 722.1 thousand hectares area with a production of 13443.6 thousand MT which accounting as 7.8 per cent of area and 8.3 per cent of the total vegetable production and its productivity 18.6 MT/ha in the year 2014-15. The data also shows that the area and production under brinjal much fluctuating over the years in India. The value of the output of brinjal in Maharashtra in 2011-2012 is 70350Rs. (in lakh) at the current price and 32012 Rs. (in lakh) at 2004-2005 prices.

In Maharashtra major, Brinjal producing districts are Nagpur, Satara, Solapur, Parbhani, Pune, Sangali, Bhandara, Akola, Amravati, Wardha, Chandrapur, Latur, Nashik, Dhule, Beed, Aurangabad, and Kolhapur. Hence this study was purposefully conducted in Akola district with the objective to study the knowledge and adoption of the brinjal growers about the recommended cultivation practices.

MATERIALS AND METHODS

The Study was conducted in Akola *Panchayat Samiti* of Akola district in Vidarbha region of Maharashtra state as having the large area under brinjal cultivation. Exploratory research design of social research was used for the present study. The eight villages selected for the present study were namely Chandur, Changephal, Kumbhari, Dongergaon, Wasimba, Alanda, Sukoda, and Paisali (Sukuli). From each selected village, 15 respondents were selected randomly having brinjal crop. Thus, total 120 brinjal growers were the respondents for the present study.

Measurement of Knowledge:

Knowledge about Cultivation of Brinjal

English and English (1961) defined knowledge as the body of understood information possessed by an individual.

In the present study, knowledge has been operationally defined as the body of awareness and understood information possessed by an individual brinjal grower about brinjal cultivation practices. It was measured with the help of teacher-made knowledge test, which was developed in consultation with scientists, research articles, and various scientific publication. A teacher made knowledge test consists of improved cultivation practices for brinjal crop. The knowledge test composed of items as questions. The score of '1' for yes response and '0' for no response were given. The obtained knowledge score was converted into the knowledge index with the help of the following formula

$$\text{Knowledge Index} = \frac{\text{Actual obtained knowledge score}}{\text{Maximum obtainable knowledge score}} \times 100$$

The respondents were categorized according to obtained knowledge index score with equal interval method as low (Upto 33.33), medium (33.34 to 66.66) and high (Above 66.66) level of knowledge of the recommended technology of brinjal.

Measurement of Adoption

It operationally defined as decision-making process where individual brinjal growers through a number of mental stages over a period of time before making a final decision to adopt the improved cultivation technology of brinjal growers.

The extent of adoption of the recommended technology of brinjal was measured on three continuum i.e. complete, partial and no adoption with a score of 2, 1, and 0 respectively. The raw score obtained on adoption test were converted into adoption index as below

$$\text{Adoption Index} = \frac{\text{Total obtained adoption score of all items}}{\text{Maximum obtainable adoption score}} \times 100$$

Obtained adoption raw score was converted into adoption index and the respondents were categorized into three categories i.e. low, medium and high on the basis of overall adoption index by equal interval method as low (Upto 33.33), medium (33.34 to 66.66) and high (Above 66.66) level of adoption of recommended technology of brinjal.

RESULTS AND DISCUSSIONS

Brinjal growers according to Knowledge and adoption of recommended cultivation practices for brinjal crop

- **Knowledge of Brinjal Growers**

Adequate and relevant knowledge of recommended cultivation practices of brinjal growers is very important for brinjal growers. The knowledge of brinjal growers was studied and presented in Table 1.

Table 1: Distribution of the Respondents according to their Knowledge

Sl. No.	Cultivation Practices	Knowledge (n= 120)	
		Frequency	Percentage
A	Land Preparation		
1.	Ploughing	120	100
2.	Harrowing	120	100
B.	Bed preparation (Ridges and Farrow)	90	75.00
C.	Manure Application (FYM/OM/Compost)	120	100
D.	Soil type (sandy loam and well drained)	12	10.00
E.	Fertilizer dose (100-120 kg N, 75-85 kg P, 45-50 kg K)	118	98.33
F.	Time of transplanting (June- September)	108	90.00
G.	Intercultural Operation		
1.	Weeding	120	100
2.	Hoeing	120	100
H.	Irrigation methods (Drip/Sprinkler/Flood)	118	98.33
I.	Plant protection (Phomosis blight/fruit rot/ fruit and shoot borer/ little leaf of brinjal/	104	86.66

	brinjal brown leaf hopper / hadda beetle / damping off)		
J.	Harvesting		
1.	Methods of harvesting (by hand with stalk at joints which is attached in the branches)	119	99.17
2.	Time of harvesting (afternoon)	107	89.16
3.	4-6 days intervals after 1 st harvest for next harvest	116	96.66

A critical look towards practice wise knowledge about the recommended cultivation practices of brinjal from the Table 1 revealed that, farmers know cent percent knowledge about the land preparation i.e. ploughing and harrowing, manure application i.e. farmyard manure/ organic matter/ compost and intercultural operation i.e. weeding and hoeing. It was followed by methods of harvesting (by hand with stalk at joints which is attached in the branches) with 99.17 per cent of the respondents, 98.33 per cent of the respondents are having knowledge about fertilizer dose, irrigation methods with closely followed by 96.66 per cent of the respondents have knowledge about days intervals between the first harvest and second harvest. Whereas, 90.00 per cent of the respondent had knowledge about the time of the transplanting and 89.66 per cent of the respondents had knowledge about a time of harvesting (afternoon). It is also noticed that 86.66 per cent of the respondent had known about plant protection and 75 per cent of them known about bed preparation. However, only 10.00 per cent of the respondents are having knowledge about soil type.

Table 2: Distribution of the Respondents According to Overall Knowledge Level

Sl. No.	Overall Knowledge Level	Score Index	Respondents (n = 120)	
			Number	Per cent
1.	Low	Up to 33.33	-	-
2.	Medium	33.34 to 66.66	-	-
3.	High	Above 66.66	120	100.00
Total			120	100.00

The results regarding overall knowledge about the cultivation of brinjal from the Table 2, indicated that cent per cent of the respondents had high knowledge about the cultivation practices of brinjal. The probable reason might be the interest in knowing about the recommended cultivation practices in brinjal and their eagerness to learn about new knowledge or technology which is related to brinjal cultivation. Somewhat similar results are found with the above results are Bennur (2011) and Gavade (2013).

Adoption

Adoption is a decision- making process where individual through a number of mental stages over a period of time before making a final decision to adopt the improved cultivation technology. The extent of adoption by the brinjal growers was studied and presented in Table 3.

The adoption of various practices, related with brinjal cultivation by the respondent was further ascertained practice wise and the same have been presented in Table 3. It is evident from the above table that, cent per cent of the respondents completely adopted the land preparation i.e. ploughing and harrowing. It is closely followed by 97.50 per cent of the respondents completely adopted weeding while 80.00 per cent hoeing, 86.66 per cent of the respondents completely adopted methods of harvesting (by hand with stalk at joints which is attached in the branches), while 85.00 per cent of the respondents completely adopted irrigation methods i.e. drip/sprinkler/flood. Three fourth (79.16%) of the respondents

completely adopted days interval between the 1st harvest and next harvest, followed by majority of the respondents completely adopted transplanting time (56.66%), time of harvesting i.e. afternoon (32.50%), bed preparation (31.66%), plant protection (17.50%), manure application (2.50%) and fertilizer dose (0.83%).

However, it is observed that a maximum number of the respondents partially adopted the fertilizer dose (98.34%), manure application (97.50%) and plant protection (69.16%). While, most of the respondent partially adopted time of harvesting i.e. afternoon (60.34%), bed preparation i.e. ridges and furrow (41.67%) and time of transplanting (37.50%). It is followed by the respondent who partially adopted intercultural operation i.e. hoeing (29.17%) and weeding (2.50%), irrigation methods (14.17%).

Table 3: Distribution of the Respondents According to their Adoption

Sl. No.	Cultivation Practices	Adoption (n=120)		
		Complete	Partial	No Adoption
A	Land Preparation			
1.	Ploughing	120 (100.00)	0 (00.00)	0 (00.00)
2.	Harrowing	120 (100.00)	0 (00.00)	0 (00.00)
B.	Bed preparation (Ridges and Farrow)	38 (31.66)	50 (41.67)	32 (26.66)
C.	Manure Application (FYM/OM/Compost)	3 (2.50)	117 (97.50)	0 (00.00)
D.	Soil type (sandy loam and well drained)	0 (00.00)	6 (5.00)	114 (95.00)
E.	Fertilizer dose (100-120kg N, 75-85kg P,45-50kg K)	1 (0.83)	118 (98.34)	1 (0.83)
F.	Time of transplanting (June-September)	68 (56.66)	45 (37.50)	7 (05.83)
G.	Intercultural Operation			
1.	Weeding	117 (92.50)	3 (2.50)	0 (00.00)
2.	Hoeing	96 (80.00)	24 (20.00)	0 (00.00)
H.	Irrigation methods (Drip/Sprinkler/Flood)	102 (85.00)	17 (14.17)	1 (0.83)
I.	Plant protection (Phomosis blight/fruit rot/ fruit and shoot borer/ little leaf of brinjal/ brinjal brown leaf hopper / hadda bettle / damping off)	21 (17.50)	83 (69.16)	16 (13.34)
J.	Harvesting			
1.	Methods of harvesting (by hand with stalk at joints which is attached in the branches)	104 (86.66)	16 (13.34)	0 (00.00)
2.	Time of harvesting	39 (32.50)	73 (60.34)	8 (06.66)
3.	4-6 days intervals after 1 st harvest for next harvest	95 (79.16)	15 (12.50)	10 (8.34)

It is also revealed that 13.34 per cent of the respondents had partially adopted methods of harvesting (by hand with a stalk at joints which is attached in the branches) and 12.50 per cent of them in day intervals between 1st harvest and next harvest.

Whereas, majority of the respondents does not adopted the soil type i.e. sandy loam and well drained (95.00%),

followed by bed preparation (26.66%), plant protection (13.34%), day of intervals between the 1st harvest and next harvest (8.34%), time of harvesting (6.66%) and time of transplanting (5.83%). Only 0.83 per cent of the respondent does not adopted fertilizer dose and irrigation methods.

Thus, it can be said that a maximum number of the respondent adopted land preparation, intercultural operation, methods of harvesting and irrigation methods.

Table 4: Distribution of the Respondents according to Overall Adoption Levels

Sl. No.	Overall Adoption Level	Score Index	Respondents (n = 120)	
			Number	Per cent
1.	Low	Up to 33.33	-	-
2.	Medium	33.34 to 66.66	11	9.17
3.	High	Above 66.66	109	90.83
Total			120	100.00

It is apparent from the Table 4, that maximum numbers (90.83%) of the respondents had the high category of adoption level, followed by medium category (9.17%) of adoption level of brinjal cultivation practices. Thus, it concluded that majority of the respondents had high adoption level.

These findings are contrast with the findings of Bennur (2011), Kumar (2012) and Gavade (2013). This indicates the scope for motivating the brinjal growers about adoption of recommended cultivation technology of brinjal through demonstrations and arranging exposure visits and conveying them to put the practices in actual use.

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