

Adoption and Knowledge Level of Small Farmers about Scientific Brinjal Cultivation Practices in Patan Block of Durg District (Chhattisgarh), India

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Abstract—The present study was conducted in Durg district of Chhattisgarh (India) during 2014-15 due to the important vegetable crops and commercial areas. Five villages were randomly selected from one block making 146 villages covered in this study. From each village, 20 respondents randomly selected, making a sample of 100 respondents. The study aimed to assess the Adoption and knowledge level of brinjal growers in brinjal production. Information was obtained with the help of personal interview method during the study period. The data were analyzed, tabulated and the results were drawn with the help of appropriate statistical methods like score, mean score value, standard deviation and correlation coefficient were calculated. The finding of the study revealed that the overall level of Adoption and knowledge of brinjal production technology was medium. Majority of the farmers (69%) had medium level of knowledge and adoption (67%) of scientific brinjal cultivation practices. More number of large farmers had high level of knowledge and adoption as compared to medium and small farmers. More awareness programmes be organized to increase level of knowledge and adoption of brinjal cultivation practices to sustain brinjal production in Chhattisgarh.

Keywords: Knowledge, Adoption, Scientific cultivation practices, Brinjal growers, Statistical tools, Chhattisgarh.

1. INTRODUCTION

Brinjal or eggplant (*Solanum melongena*L.) is an important solanaceous crop of sub-tropics and tropics. The name brinjal is popular in Indian subcontinent and is derived from Arabic and Sanskrit whereas the name eggplant has been derived from the shape of the fruit of some varieties, which are white and resemble in shape to chicken eggs. It is also called aubergine (French word) in Europe. Chhattisgarh accounts for 4% of total production of Brinjal in the country and is producing about 0.44 m. MT of Brinjal from an area of about 0.03 m. ha with productivity of 16.5 t/ha. (Anonymous 2012). Brinjal is one of the most commonly grown vegetable crop of the country. India produces about 7.676 M mt of brinjal from an area of 0.472 M ha with an average productivity of 16.3

mt/ha. The brinjal producing states are Orissa, Bihar, Karnataka, West Bengal, Andhra Pradesh, Maharashtra and Uttar Pradesh. In West Bengal brinjal is grown in 0.140 M ha area with the production of 2.388 M mt and productivity of 17.0 mt/ha. The major brinjal producing belts in West Bengal are Hoogly, 24-Paraganas and Burdwan. Brinjal has ayurvedic medicinal properties and white brinjal is good for diabetic patients. It is also a source of vitamins A, C and minerals. (PRDC Goa). The action of individual farmers is governed by personal, social, economic, psychological and cultural factors involved in situation. Some farmers adopt new technology more quickly than others because of difference in personal characteristics. Similarly if there is difference in economic factors, process of action is also changed, there by changing the pattern of adoption (Bandge et al., 2007). Several studies have been conducted on vegetable crops to know the knowledge and adoption of recommended cultivation practices but very few research studies have been conducted on brinjal crop in Chhattisgarh state. Hence, present study was designed to know the reaction, reason for adopting brinjal production with the specific objective.

- To find out the extent of knowledge of scientific brinjal cultivation practices by brinjal growers.
- To study the relationship between selected independent variables and the extent of knowledge and adoption of scientific cultivation practices.

2. METHODS AND MATERIALS

The study was purposively conducted in Durg district of Chhattisgarh due to the important vegetable crops and commercial areas. Five villages were randomly selected from one block making 146 villages covered in this study. From each village, 20 respondents randomly selected, making a sample of 100 respondents. The primary data were collected with the help of personal interview method during the study

period. The data were analyzed, tabulated and the results were drawn with the help of appropriate statistical methods like score, mean score value, standard deviation and correlation coefficient were calculated.

English and English (1961) defined knowledge, as a body of understandable information possessed by an individual or by culture. The knowledge test consisted of items called questions covering all the package of practices of brinjal production technology. The set of questions developed were discussed with the subject matter specialists in different disciplines who were members of advisory committee. Total 11 questions were finalized. A teacher made scale was developed to measure the knowledge level of farmers regarding selected technologies recommended for brinjal crop, and was used with due modifications. The responses of respondents regarding knowledge were obtained into three point continuum as under.

Categories Score

Incomplete knowledge 1

Partial knowledge 2

Complete knowledge 3

Finally the adoption index was calculated by the following formula:

$$\text{Knowledge index} = \frac{\text{Total knowledge score obtained by respondents}}{\text{Maximum attainable score}} \times 100$$

The mean and standard deviation of all the respondents' knowledge scores were computed for classifying the knowledge in different categories. Based on the mean knowledge score and standard deviation the farmers were categorized under three knowledge level categories, namely low, medium and high knowledge level as follows:

- Low knowledge level = score up to (mean knowledge – S.D.)
- Medium knowledge level = Score (mean knowledge-S.D.) to (Mean + S.D.)
- High knowledge level = Score above (mean knowledge + S.D.)

Finally the adoption index was calculated by the following formula:

$$\text{Adoption index} = \frac{\text{Total adoption score obtained by respondents}}{\text{Maximum attainable score}} \times 100$$

The formula was applied for all practices which helped in calculating adoption index. The mean and standard deviation of all the respondents' adoption scores were computed for

classifying the adoption in different categories. Based on the mean adoption score and standard deviation. The farmers were categorized under three adoption level categories, namely low, medium and high adoption level as follows:

- Low adoption level = Score up to (mean adoption -SD)
- Medium adoption level = Score from (mean adoption-SD) to (Mean + SD)
- High adoption level = Score above (mean adoption + SD)

3. RESULTS AND DISCUSSION

Table 1: Practice wise knowledge extent of farmers about scientific brinjal cultivation practices.

S. No.	Cultivation practices:	Respondents	
		Percentage	Rank
1.	Field Preparation	57.15	II
2.	High yielding Varieties (HYVs)	48.90	III
3.	Seed Treatments	6.30	XI
4.	Time of sowing	47.20	IV
5.	Seed rate & recommended spacing	18.58	X
6.	Fertilizers application	20.43	VIII
7.	Plant growth regulators	19.50	IX
8.	Irrigation management	32.33	V
9.	Inter cropping and weed management	23.18	VII
10.	Plant protection measures	29.53	VI
11.	Harvesting	88.49	I
	Total average	37.03	

The data in Table 1. Indicated that, the average knowledge extent of farmers about scientific brinjal cultivation were 37.03. Out of 11 selected cultivation practices, the extent of knowledge of "Harvesting, marketing" 88.49% was higher than the other practices of brinjal and it was ranked 1st followed by "field preparation", 57.15%, and "High Yielding Varieties (HYVs)" and were ranked 2nd and 3rd, respectively. Whereas, cent per cent of the respondents had correct knowledge about non recommended varieties of private seed companies. Regarding recommended knowledge extent of scientific brinjal cultivation practices like "Time of sowing", "Irrigation management" "Plant protection measures" had 47.20%, 32.33%, 29.58% and ranked 4th 5th and 6th, respectively Atchuta and Radhakrishnamurthy (2001). While the extent knowledge of recommended scientific brinjal cultivation practices likes, "Inter cropping & weed management", "Fertilizer application", and "Plant growth regulators" with 23.18 %, 20.43 % and 19.50 % and were ranked 7th, 8th and 9th, respectively. Further, the knowledge extent of recommended scientific brinjal cultivation practices likes, "Seed rate and recommended spacing" and "Seed treatment", had 18.58% and 6.30% with 10th and 11th ranked, respectively.

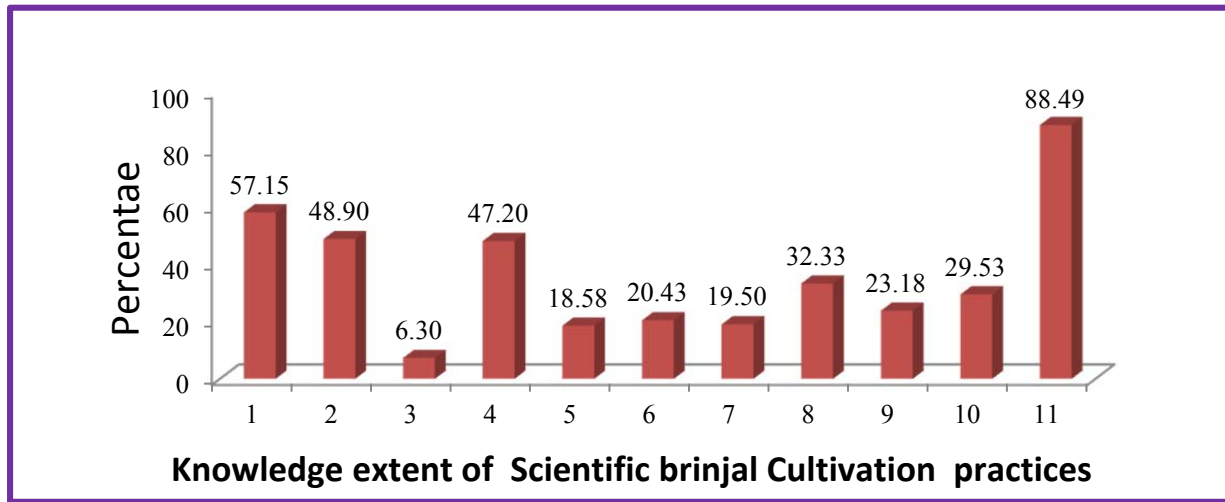


Fig. 1: Practice wise Knowledge Extent of Scientific brinjal Cultivation Practices.

Table 2: Practice wise overall knowledge extent of farmers about scientific brinjal cultivation practices.

N=100

S. No.	Overall Knowledge Categories (scores)	Respondents	
		Number	Percentage
1.	Low (Up to 21)	12	12.00
2.	Medium (22-46)	67	69.00
3.	High (Above 46)	21	21.00
Total		100	100.00

Mean =32.70, S.D.=11.12, Min.=17.02, Max. = 61.48

The Data in Table 2. Indicated that majority of the respondents (67.00%) had medium level knowledge followed high (21.00%) and low (12.00%) level knowledge about scientific brinjal cultivation practices respectively (Kubde 2000). Thus, it may be concluded that majority of respondents (69.00%) were found medium level (23-44) knowledge about scientific brinjal cultivation practices.

Table 3. Practice wise adoption extent of farmers about scientific brinjal cultivation practices.

N=100

S. No.	Cultivation practices	Respondents	
		Percentage	Rank
1.	Field Preparation	25.66	V
2.	High yielding Varieties (HYVs)	30.66	IV
3.	Seed Treatments	00	XI
4.	Time of sowing	37.33	III
5.	Seed rate & recommended spacing	15.90	VII
6.	Fertilizers application	1.97	X
7.	Plant growth regulators	14.75	VI
8.	Irrigation management	14.66	VIII
9.	Inter cropping and weed management	5.33	IX

10.	Plant protection measures	49.86	II
11.	Harvesting	75.66	I
Total average		25.79	

The data presented in table 3. Indicates that the average, extent of adoption of recommended scientific brinjal cultivation practices were 25.79 per cent. Out of 11 selected practices, the extent of adoption of “Harvesting”, 75.66 percent was higher than the other adopted practices of brinjal and it was ranked 1st followed by the adoption of “Plant protection measures” and “Time of sowing”, 49.86 per cent, 37.33 per cent and were ranked 2nd and 3rd, respectively. This finding is in conformity with results of Mewara and Pandya (2007). The extent of adoption of the recommended scientific brinjal cultivation practices like “High yielding Varieties” (HYVs), 30.66 percent, “Field preparation” 25.66 per cent and “Plant growth regulators” 14.76 per cent and were ranked 4th, 5th and 6th, respectively. While the extent adoption of recommended scientific brinjal cultivation practices likes “Seed rate & recommended spacing”, “Irrigation management” and “Inter cropping and weed management”, with 15.90 per cent, 14.66 per cent and 5.33 per cent and were ranked 7th, 8th and 9th, respectively. Further, the adoption extent of recommended scientific brinjal cultivation practices likes, “Fertilizers application” and “Seed treatment” with 1.97 percent and 00.00 per cent and ranked 10th and 11th, respectively.

Table 4: Practice wise overall adoption extent of farmers about scientific brinjal cultivation practices.

N=100

S. No.	Overall adoption Categories	Respondents	
		Number	Percentage
1.	Low (Up to 17)	11	.00
2.	Medium (18-36)	69	69.00
3.	High (Above 36)	20	19.00
Total		100	100.00

Mean=26.93, S.D.=9.12, Min.=10.62, Max.=50.52
 The Data in Table 4. Indicated that majority of the respondents of about 69.00 per cent of farmers were found to be medium adoption, while 20.00 percent farmers were high adoption and 11.00 per cent farmers were low adoption level about

scientific brinjal cultivation practice respectively. Thus, it concluded that majority of respondents (69.00%) had found medium level of adoption about scientific brinjal cultivation practices respectively. Their findings are in the line with the finding reported by Rathod (2009).

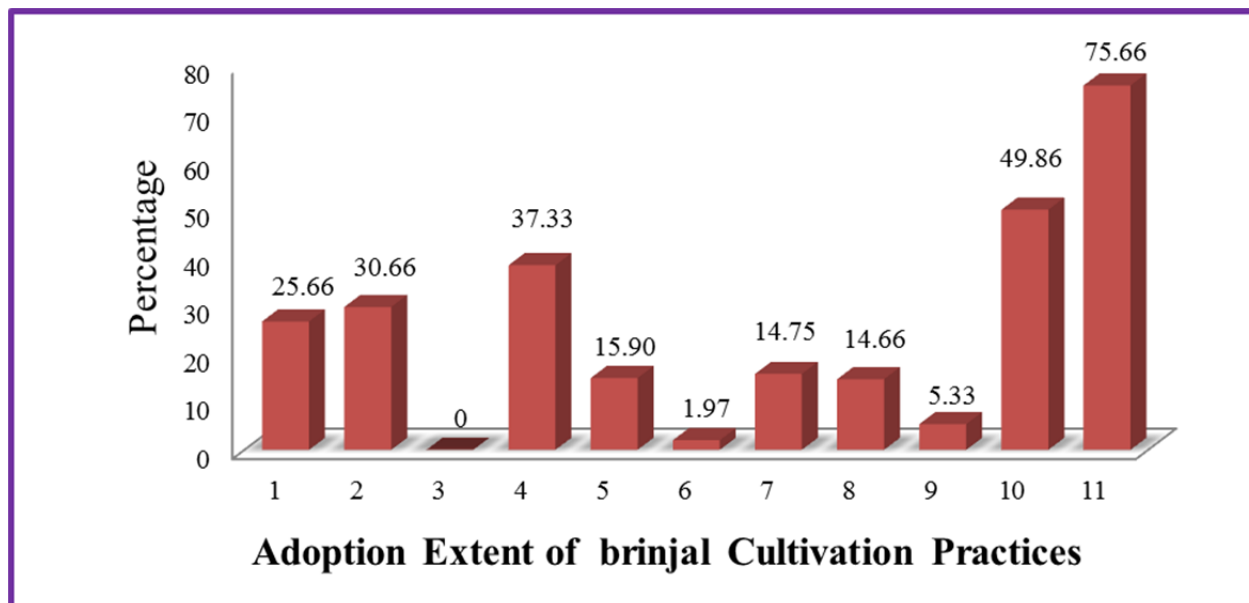


Fig. 2–Practice wise Adoption Extent of Scientific brinjal Cultivation Practices.

4. CONCLUSION

Majority of the farmers had medium level of knowledge and adoption of scientific brinjal cultivation. The large farmers had comparatively higher level of knowledge and adoption about scientific cultivation of brinjal than the medium and small farmers. The extension agencies have to play an important role to create awareness among the farmers about scientific brinjal cultivation practices. Extension agencies should demonstrate to the farmers the process of seed treatment and keep them updated about recent HYVs. Extension agencies should also impart the technical knowhow of balanced use of fertilizer. Government should ensure farmers timely availability of quality seeds and procurement of farm produce at reasonable price.

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