

ADOPTION OF IMPROVED CUMIN PRODUCTION TECHNOLOGY BY THE GROWERS OF JALORE DISTRICT

M.S. Chandawat¹ M. S. Chouhan² and R. F. Thakor³

ABSTRACT

Cumin is one of the important and ancient spices and it is almost exclusively cultivated in Rajasthan and Gujarat. India is the world's largest producer and consumer of the cumin. It is used as powder, medicinal, beverages, cumin sips, organic cumin, oil and oleoresin, besides manifold medicinal uses. The present investigation was undertaken in Jalore district of Rajasthan. The farmers were found medium to low adoption level of improved cultivation practices of cumin production technology. The highest adoption gap was found in practice of seed treatment followed by plant protection measures and use of high yielding varieties. There was highly significant difference found between extent of knowledge and level of adoption about the improved cultivation practices of cumin production technology among respondents.

INTRODUCTION

India has been known from time immemorial as the "Home of Spices" producing almost all spices and condiments known to the world. Cumin is the dried fruit of a small herbaceous plant and was quite popular even during biblical times as an efficient digestive and a food flavor for a ceremonial feast. In the developing spice growing countries like India, the spices are being almost exclusively used in house hold sector as natural food flavorings while in industrially advanced countries of the west where processed foods are consumed in large quantities. This sector prefers to use the spices extractives as essential oils and oleoresins because of certain advantages. Nearly 90 per cent of its production is being carried out in Rajasthan and Gujarat states of India. In the year 2005-06, the farmers of Rajasthan had cultivated in 135113 ha. with the production of 152239 tonnes. The export during 2007-08 was 28000 tonnes fetches Rs. 2,915 million from the overseas market.

It is surprise to note that the improved cumin production technology by the farmers Rajasthan have not recognized seriously which, might be one of the essential elements for higher production.

Thus, there is a great need for the adoption of improved agricultural practices of cumin crop by the farmers to enhance quality production and thereby income. In order to access the extent to which the farmers knows about improved cumin technologies and extent to which technology adopted by the farmers, the study was undertaken.

METHODOLOGY

This study was purposively conducted in Jalore district of Rajasthan as Jalore district having large area under cumin crop and also leading in its production. A multistage sampling design was adopted to select sample for data collection for the present study. Four villages namely Arnay, Sarnau, Jhontra and Sinwara of Sanchore panchayat samiti of Jalore district of Rajasthan state was selected randomly. From each selected villages a comprehensive list of cumin growers was obtained from *patwari* and from which 25 farmers were selected randomly from each village. Thus the sample size consisted of 100 respondents. Data of the study were collected with the help of personal interview schedule. In order to measure the knowledge and adoption score of the individual respondents, nine practices of cumin

1 SMS (Ext.) Krishi Vigyan Kendra-Kheda

2. Assist. Professor (Ext.),RAU, Bikaner

3. Programme Coordinator, Krishi Vigyan Kendra-Valsad

production technology viz., use of high yielding varieties, field preparation, seed treatment, fertilizer application, irrigation, weed control, plant protection measures, harvesting and storage of cumin seed were selected. Each selected practice was assigned one score for correct answer and zero

score for incorrect answer. The possible maximum score obtainable by the individual respondent was 58. Differences in knowledge level possessed by respondents from selected villages were also calculated.

RESULTS AND DISCUSSION

Table 1 : Adoption of cumin production technology by the cumin growers

n=100

Sr. No.	Improved practices	Mean score	adoption (In MPS)	Adoption gap in MPS	Rank
1	Use of high yielding varieties	1.00(3)	33.33	66.67	VIII
2	Field preparation	3.17(4)	79.25	20.75	II
3	Seed Treatment	0.07(3)	2.33	97.67	IX
4	Sowing practices	6.27(15)	40.18	59.82	VI
5	Fertilizer Application	7.31(15)	48.73	51.27	IV
6	Irrigation	3.25(4)	81.25	18.75	I
7	Weed Control	3.31(9)	36.78	63.22	VII
8	Plant protection measures	1.00(3)	33.33	66.67	III
9	Harvesting & storage	4.65(6)	77.50	22.50	V
	Overall	(58)	48.80	51.20	

Figures in parenthesis indicate maximum possible score in respective practices.

Table 2: Significance of difference in level of adoption of cumin production technology by the farmers of different villages

Sr. No.	Source of variance	d. f.	S. S.	MPS	'F' value
1	Between the villages	3	16.04	5.3467	0.7146 NS
2	Within the villages (Error)	96	718.72	7.4867	
	Overall	99	734.76		

NS : Not significant at 1 per cent level

Table 3 : Relationship between extent of knowledge & level of adoption among respondents n=100

Sr. No.	Improved practices	Knowledge MPS	Adoption MPS	'Z' value
1	Use of high yielding varieties	87.40	33.33	50.006**
2	Field preparation	82.71	79.25	24.538**
3	Seed Treatment	56.50	2.33	17.434**
4	Sowing practices	69.33	40.18	1.419 NS
5	Fertilizer Application	70.25	48.73	5.862**
6	Irrigation	85.00	81.25	10.102**
7	Weed Control	73.83	36.78	10.35**
8	Plant protection measures	91.25	33.33	51.186**
9	Harvesting & storage	92.67	77.50	17.288**
	Overall	78.80	48.80	29.784**

** Significant at 1 per cent level of significance, NS: Not significant

Table value of 'Z' at 1 per cent level of significance is 2.58.

1 Adoption of cumin production technology by the respondents:

Majority of the farmers (60per cent) had medium

level of adoption while 24 per cent respondents had low level of adoption. Only 16 per cent farmers found to have high level of adoption. Data regarding level of adoption of improved cultivation

practices of cumin are depicted in Table-1. The overall mean percentage score of respondents were 48.80. The highest level of adoption was found in case of irrigation practices with mean per cent score 81.25. Time of irrigation and method of irrigation is an important factor in cultivation of cumin. The growers have vast experience of their field condition *i.e.* soil structure, soil texture, soil profile and hence found higher knowledge about method of irrigation. This was followed by field preparation practices with mean per cent score (MPS) 79.25, the level of adoption about harvesting and storage practices of cumin crop was kept on third with the mean per cent score of 77.50 and adoption gap 22.50 per cent. Adoption regarding use of high yielding varieties, sowing practices, fertilizer application, weed management and plant protection measures found low and exhibit highest adoption gap *i.e.* 66.67, 59.82, 51.27, 63.22 and 66.67 for the respective practices. The farmers had minimum adoption level about seed treatment which was 2.33 per cent and adoption gap was as high as 97.67 per cent.

2 Knowledge possessed by the farmers of different villages about cumin production technology:

The data in the Table 2 depicts that there is a non significant difference in the level of adoption among the farmers of different villages regarding improved cultivation practices of cumin. This may be because the cumin growers of the selected villages were found localite in nature, utilizing local sources of information in the vicinity of the village such as progressive farmer, input supply dealers, friends and neighbours etc.

3 Relationship between extent of knowledge & level of adoption about improved cultivation practices of cumin.

An attempt were also made to find out relationship between extent of knowledge & level of adoption about improved cultivation practices of cumin (Table-3). The calculated 'Z' value is greater than its tabulated value at 1 per cent level of significance conclude that there is a significant difference between knowledge and overall adoption

of improved cultivation practices among the respondents. In all the practices, except sowing, there was highly significant difference between the knowledge and adoption of improved cultivation practices of cumin among the respondents.

4 Personal characteristics of cumin growers :

Based on the data presented in Table 4, it is concluded that most of the respondents (47.00 per cent) were in the middle age group and belonged to higher caste (59.00 per cent). Most of them were literate and having agriculture as a main family occupation though they have small land holding. Majority of the respondents were belonged to joint family. As far as social participation is concerned a few number of the respondents were found having actively participate in different social activities. Majority of the respondents reside in *pacca* house and possessed one pair of bullock. It is also found that though they possessed localite nature they were partially inclined towards mechanized farming as they were partially equipped with small farm implements to carry out various operations.

CONCLUSION

It can be concluded that out of nine cumin production technologies adoption of seed treatment technology is very poor followed by use of high yielding varieties, sowing practices, fertilizer application, weed management and plant protection measures. In all the practices except sowing there was highly significant difference was observed between the knowledge and adoption of improved cultivation practices of cumin. Difference in the level of adoption of various cumin production technology among the farmers of different villages was found non significant.

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