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Extent Gap in Adoption of Recommended Chilli Cultivation by the Farmers

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ABSTRACT

Chilli is considered as one of the commercial spices crop and It is most widely used universal spice, named as wonder spice a good source of vitamin C, A, E, flavor and aroma. India is the largest producer and contributes 25 per cent to total world production. It is also largest consumer and exporter of Chilli, it is grown in almost all states of the country. Keeping these facts in view the present study is entitled as "Extent gap in adoption of recommended chill cultivation by the farmers" .The present study was carried out during the year 2016-17 in the Bhiwapur panchayat samiti of Nagpur district of Maharashtra. Ten villages were selected on the basis of highest area under chilli cultivation. From each selected village fifteen respondents were purposively selected thus, total of 150 farmers were selected for the study. By following the "Ex-Post-Facto" design of social research was used for the study. Study reveals that in case of nursery management lowest adoption gap (30.00%) was found in size of seed bed and Seed rate, highest adoption gap (94.66%) was found in seed treatment. Similarly In case of main field cultivation lowest adoption gap (21.33%) was found in time of transplanting, highest adoption gap level (90.00%) was found in disease management and majority of the respondents i.e. (76.00%) were having medium level of adoption gap.

Key words: *Adoption gap, Ex-Post-Facto, Chilli production technology, Nursery management, Main Field cultivation*

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INTRODUCTION

The history of Indian spices dates back to the beginning of human civilization. There are over 50 species of spices cultivated in India and many of them are indigenous *viz,* black pepper, cardamom, chilli, ginger and turmeric. While clove, vanilla, nutmeg are introduced from other countries. Among them chilli is the most common spice cultivated in the country. Chilli is known from pre-historic times in Peru. They are believed to have originated in the tropical America. It is also said that chilli has originated in the Latin American regions of the New Mexico and Guatemala as a wild crop around 7500BC, as per the remains of the pre-historic Peru. The people native to these places domesticated this crop in and around 5000 BC, Chilli is said to be the first ever domesticated crop in America.

The three species *Capsicum annuum*, *Capsicum frutescens* and *Capsicum chinense* evolved from a common ancestor located in the North of the Amazon basin. Chilli (*Capsicum annum* L) is one of the important spice/vegetable/cash crops grown in India. The Chilli plant is a white flowered, dark green or purple leaved plant that grows up to 1.5 m in height. It is also called as red pepper, an important condiment crop, grown for its pungent fruits which are used both as green and riped to impart pungency to food. Chilli is a good source of vitamin C, A, E, flavour and aroma.

Chilli is considered as one of the commercial spices crop. It is most widely used universal spice, named as wonder spice. Different varieties are cultivated for various uses like vegetable, pickles, spice and condiments. In daily life, chilies are the most important ingredient in many different cuisines around the world as it adds pungency, taste, flavor and colour to the dishes. Indian chilli is considered to be world famous for two important commercial qualities namely, its colour and pungency levels. There are more than 400 different varieties of chillis found all over the world. It is also called as hot pepper, cayenne pepper, sweet pepper, bell pepper, etc.,[13]. The major importers of Indian chillis are the USA, Sri Lanka, Bangladesh, Nepal, Mexico, Canada, UK, Saudi Arabia, Singapore, Malaysia and Germany (Source : FAO).

India is the largest producer and contributes 25 per cent to total world production. It is also largest consumer and exporter of Chilli. In India, chilli is grown in almost all states of the country. The important states growing chilli in terms of production are Andhra Pradesh (composite) (60%) followed by Karnataka (11%), west Bengal (7%), Orissa (5%), Madhya Pradesh (3%), Maharashtra (3%) and Tamil Nadu (2.6%) (Source; Spice Board, India).

Table 1: Area and Production of Chilli Crops in Maharashtra

A-000 ha

P-000 MT

Crop	2013-14		2014-15		2015-16	
	Area	Production	Area	Production	Area	Production
Green Chilli	140	1687	181	1998	173	1992
Dried Chilli	775	1492	761	1605	761	1605

Source: National Horticulture Board, Area and Production Database (nhb.gov.in 2014-15)

In Maharashtra major chilli growing districts are Nanded, Jalgaon, Dhule, Solapur, Nagpur, Amravati, Chandrapur and Osmanabad district. In Nagapur district Bhiwapur Panchyat Samiti was the major chilli growing areas. Keeping the view present study it is necessary to increase production and productivity of the crop. It was felt necessary to undertake the present of chilli growers with following specific objective;

1. To study the adoption gap in adoption of chilli production technology.

MATERIAL AND METHODS

The present study was carried out in Bhiwapur panchayat samiti of Nagpur district of Maharashtra state during 2016-17. Total ten villages have been purposively selected from bhiwapur panchathi samithi on the basis of maximum area under chilli cultivation. From each selected village fifteen respondents were purposively selected for the study, thus total 150 farmers were selected for the study. An ''Ex post facto'' design of social research was used for present study, the data were collected in face to face situation by personally contacting the selected farmers.

ADOPTION GAP

Adoption gap in recommended production technology of chilli was operationalised as the difference between the recommended package of practices and the actual adoption of the practices by the respondents in the field. Collected data were tabulated and analyzed by using mean, median, correlation coefficient. A teacher made scale for adoption gap of respondents about recommended chilli cultivation practices of chilli was developed with help of scientists of Dr. P.D.K.V., Akola, KVKs and research stations of Maharashtra state.

The adoption gap index of respondents were calculated with following formula given below:

$$\text{Adoption gap index} = \frac{R - A}{R} X100$$

Where, R= Number of the recommended practices,

A= Number of practices actually adopted by the farmer

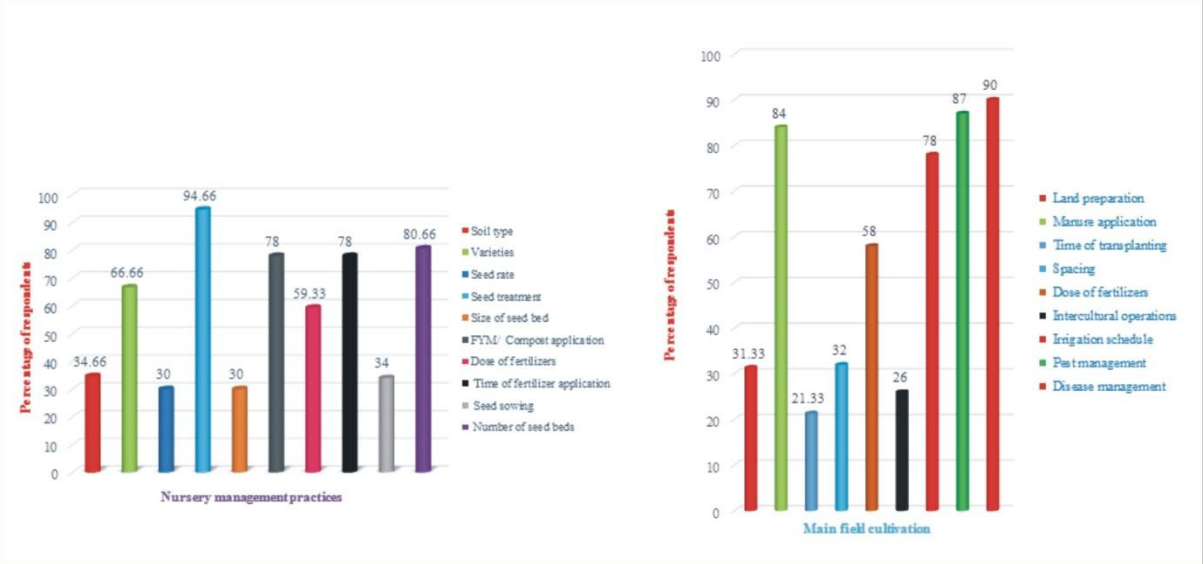
Table 2: The respondents were classified into three categories viz. low, medium and high on the basis of mean and S.D. as follows:

Sl. No.	Adoption gap Category	Score
1	Low	Up to 37.08
2	Medium	37.09 to 54.63
3	High	Above 54.63

RESULTS AND DISCUSSION

There were nineteen recommended practices of chilli cultivation and their over all adoption gap present below:

Gap in nursery management practices



Graphical representation of adoption gap in recommend chilli production technology

The data presented in Table.3 indicates that at the time of nursery management highest adoption gap (94.66%) was found seed treatment followed by, (80.66%) number of

seed beds, (78.00%) compost application and time of fertilizer application, (66.66%) recommended Varieties, (59.33%) dose of fertilizers, (34.00%) seed sowing, (34.66%) soil type, (30.00%) seed rate and size of seed bed.

Gap in main field cultivation

Similarly, in case of main field cultivation wider adoption gap in (90.00%) was found in disease management, (87.00%) followed by pest management, (84.00%) manure application, (78.00%) irrigation schedule, (58.00%) dose of fertilizers, (32.00%) spacing, (31.33%) land preparation, (26.00%) intercultural operations,(21.33%) time of transplanting.

Table 3: Distribution of the respondents according to their practice wise over all adoption gap of recommended package of practices of chilli (n=150)

Sl. no.	Practice wise adoption gap in recommended chilli cultivation	Adoption gap level (%)	Rank
Nursery management practices			
1.	Soil type	34.66	VIII
2.	Varieties	66.66	V
3.	Seed rate	30.00	IX
4.	Seed treatment	94.66	I
5.	Size of seed bed	30.00	IX
6.	FYM/ Compost application	78.00	IV
7.	Dose of fertilizers	59.33	VI
8.	Time of fertilizer application	78.00	III
9.	Seed sowing	34.00	VII
10.	Number of seed beds	80.66	II
Main field cultivation			
11.	Land preparation	31.33	VII
12.	Manure application	84.00	III
13.	Time of transplanting	21.33	IX
14.	Spacing	32.00	VI
15.	Dose of fertilizers	58.00	V
16.	Intercultural operations	26.00	VII
17.	Irrigation schedule	78.00	IV
18.	Pest management	87.00	II
19.	Disease management	90.00	I

Table 4: Distribution of respondents according to their overall adoption gap in chilli

Sl. No.	Category	Respondents (n=150)	
		Frequency	Percentage
1	Low (up to 37.08)	24	16.00
2	Medium (37.09 to 54.63)	114	76.00
3	High (above 54.63)	12	8.00
	Total	**150**	**100.00**

Mean=57.55 **SD=25.944**

The data presented in Table.4 revealed that majority (76.00%) of respondents had medium level of adoption gap followed by (16.00%) respondents had low level of adoption gap and (8.00%) respondents had high level of adoption gap in chilli. Thus it was found that higher percentage of the respondents had medium category of adoption gap. Similar type of findings were identified by Laxmi [7], mazhar *et al* [8], Goudappa *et al*[3].

Implications of Present Research Use Full to the Policy Makers and Executors Associated with Agriculture Development.

The finding of the study leads to following implications which may provide a guideline to Administrators, Policy Makers, Village Level Extension Workers, Extension Officers, other developmental agencies and Scientists associated with chilli production, in performing their functions more effectively by accelerating the adoption of recommended chilli production technology by the farmers.

The research study would be useful in understanding the profile of the respondents, their adoption gap level and constraints faced by them while adoption of recommended production technology of chilli. This dissertation however, does not claim to give implications that can be applicable in all places since the social and ecological conditions may not be identical everywhere, as the study is confined to a single district of Vidhrba Region. The results of this study lead to following implications which may useful as guideline to policy makers and executors associated with agriculture development.

General picture with respect to adoption gap in chilli production technology by the growers highlighted that the level adoption of recommended chilli production technology was medium.

In the light of these findings following suggestions are put forth:

1) It is suggested that the State Department of Agriculture and State Agricultural Universities should provide knowledge about recommended chilli production technology to the respondents which will help to increase the production and net returns to the farmer.
2) The State Department of Agriculture and State Agricultural Universities should give emphasis on the organization of short training courses for respondents to gain improved knowledge regarding recommended production technology of chilli which will help to increase the knowledge level of the respondents.
3) The extension workers of State Department of Agriculture should use advance communication media for effective diffusion of innovations in the field of agriculture, to the respondents for convincing them about the adoption of especially recommended production technology of chilli. This should necessarily include the organization of demonstrations, farm schools and visit to successful farmers.
4) Only few per cent of the respondents using recommended varieties of chilli, which has direct effect on low yield, therefore it is suggested that State Department of Agriculture, NGOs, and Agriculture Universities should take intensive efforts for promoting the people to adopt improved or recommended varieties.
5) Most of the respondents were expressed some of constraints while in adopting the recommended chilli production technology which need to be give serious thought and should be manage properly in future.
6) It is recommended that the necessary information on recommended chilli production technology is need to be given through mass media like newspaper, radio, television, internet and extension publication, so that farmers may increase that knowledge level and be motivated to adopt complete chilli production technology which in turn helps in increasing the adoption level of respondents.

CONCLUSION

The major conclusions drawn from the present study were the maximum adoption gap was found in nursery management are number of seed beds, size of seed bed, and time of fertilizer application, similarly in case of main field cultivation disease management, Pest management, manure application. One of the best ways to overcome this gaps is to vigorously utilize the scientific expertise of Krishi Vigyan Kendras for conducting regular off campus training for the farmers.

Conducting Farmer's Field Schools would certainly help to bridge these gaps.

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