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TECHNOLOGICAL GAP IN CHILLI CULTIVATION PERCEIVED BY FARMERS

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ABSTRACT

A study was conducted on technological gap in adoption of Chilli cultivation practices in Jewargi taluka of Gulbarga district of Northern Karnataka during 2012. By following the simple random sampling, a sample size of 120 respondents was selected from six villages namely Birala, Andola, Kellur, Sonna, Rampur and Narbola. The ex-post-facto research design was used for the study. The findings revealed that 45.83% of farmers had medium technological gap followed by high technological gap (30.83%) about the Chilli cultivation practices. Among the various recommended technologies, the maximum gap were observed in seed rate (88.50%) followed by usage of weedicides (86.00%), seed bed preparation (85.32%) and spacing (55.00%), and seed treatment (62.82%), plant protection measures (46.66%), use of manures (38.23%), seedlings per hill (28.50%). Further, limited of knowledge, lack of technical knowhow, non-availability of good quality of inputs at right time, sub-standard and costly chemical fertilizers and pesticides, lack of purchasing power, fear of crop loss etc were expressed as reasons for technological gap in adoption of Chilli cultivation practices.

INTRODUCTION

Chilli is one of the most important commercial crops of India. It is grown almost throughout the country. There are more than 400 different varieties of chillies found all over the world. It is also called as hot pepper, cayenne pepper, sweet pepper, bell pepper, etc. It's botanical name is "Capsicum annuum". The world's hottest chilli "Naga Jolokia" is cultivated in hilly terrain of Assam in a small town Tezpur, India. Different varieties are grown for vegetables, spices, condiments, sauces and pickles. Chilli occupies an important place in Indian diet. It is an indispensable item in the kitchen, as it is consumed daily as a condiment in one form or the other. Among the spices consumed per head, dried Chilli fruits constitute a major share. Currently, Chillies are used throughout the world as a spice and also in the making of beverages and medicines. If some varieties of Chillies are famous for red colour because of the pigment 'capsanthin,' others are known for biting pungency attributed to 'capsaicin.' India is the only country which is rich in many varieties with different quality factors. Chillies are rich in vitamins, especially in vitamin A and C.

In India, Chilli was grown on an area of 8.82 lakh ha and annual production of 11.0 lakh tonnes and with an average productivity of 1200 kg/ha (Anon., 2002). Among Chilli producing states in the country, Andhra Pradesh contributes 49 per cent followed by Orissa (18%), Karnataka (15%), Maharashtra (6%), West Bengal (5%), Rajasthan (4%) and Tamil Nadu (3%) (www.ikisan.com).

Our Karnataka state stands 3rd in contribution of Chilli production to country. We have different chilli varieties such as Byadagi kaddi , Byadagi dabbi, Guntur(G-4) , Pusa jwala, KDSC-1, etc. are cultivated by farmers, however Byadagi & Guntur varieties has been recommended for cultivation. These varieties gaining the popularity among the farmers of the state also, because of chillies are famous for red colour because of the pigment 'capsanthin,' others are known for biting pungency attributed to 'capsaicin. . Therefore, Chilli cultivation could prove beneficial to the farmers dependent on this crop. If only the farmers take care of certain recommendations regarding technologies involved in the cultivation of Chilli crop. Moreover, as all of us known that development and acceptance of modern agricultural technology is the prime attention for increasing production, yet their

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cultivation pattern varies from farmer to farmer according to their personal, psychological and social characteristics.

The new technology developed by Agricultural Universities and research institutes; it has been observed that either the same has not reached to the farmers' field or farmers are reluctant to use this technology. The technological gap is a major problem of increasing production in the country, so with this background, the present study was undertaken to measure the technological gap existing in the adoption of package of practices of Chilli.

RESEARCH METHODOLOGY

The study was conducted during the year 2012 in selected villages of Jewargi taluka of Gulbarga district of Karnataka. The taluka was purposively selected because familiarity of particular area. Six villages namely Biral (B.), Andola, Kellur, Sonna, Rampur and Narbola were selected based on the criteria of maximum chilli growers. For each of the village a list of farmers who had grown Chilli was prepared with the help of the officials of the Department of Horticulture, Jewargi. From each village, 20 Chilli cultivators were selected randomly. Thus a total number of 120 respondents constituted the sample for the study. A pre-tested interview schedule was used to collect the data through personal interview method. The data collected were then tabulated and analyzed by using suitable statistical measures.

The technological gap was measured with the help of technological gap index developed by Biradar (2012). The formula adopted for measuring technological gap is as under.

$$\text{Technological gap index} = \frac{R - A}{R} \times 100$$

Where,

R= Recommended technology,

A= Practices adopted by the farmers

For practice wise technological gap in Chilli cultivation technology were ascertained by using the formula

$$\text{Technological gap (Practice wise)} = \frac{S - A}{A} \times 100$$

Where,

S= Standard score (Total number of respondents),

A=Actual score (Actually technology adopted)

RESULTS AND DISCUSSION

From the findings in Table 1 it can be inferred that the 45.83% of farmers had medium technological gap followed by high technological gap (30.83%) about the chilli cultivation practices with mean technological gap scores of 13.75 and 30.90, respectively. While, 23.33 per cent of them possessed low overall technological gap with mean technological score of 13.75, Knowledge limits the action of the individual as it is the basic for any individual to think of pros and cons in making a decision to adopt or reject a practice, hence probable reason for majority of the respondents to fall under medium adoption category might be due to the medium to high knowledge possessed by majority of the respondents. The finding was in conformity with the results of Ranish et. al., (2001).

Table 1. Overall technological gap about chilli cultivation practices

n=120

S. No.	Categories	Frequency	Percentage	Mean score
1	Low (Mean-0.425SD)	28	23.33	13.75
2	Medium (Mean + 0.425SD)	55	45.83	30.90
3	High (Mean + 0.425SD)	37	30.33	21.42
	Mean = 20.16		SD=5.41	

There is 88.50 per cent of technological gap was observed in the recommended seed rate. This was due that most farmers do not know the recommended seed rate and also they were using some traditional practices i.e., 6kgs of dry chilli

fruits they get 2 kgs of seeds to measure the seed quantities. A few who knew the recommended seed rate were negligent. Sometimes when a specific seed variety is in demand, inadequate supply and high seed might have forced the farmers to adopt a lesser seed rate. The reason attributed was "cost of seed is high" which might have forced to adopt lesser seed rate, while over adoption of this practice was noticed with the major reasons attributed were "Lack of knowledge" and "more seed required" to avoid risk of poor plantation.

There is more technological gap in the use of weedicides (86.00%), the major reasons expressed were lack of knowledge, fear about crop loss. So they follow hand weeding only. We found gap of 85.32 per cent in the Seed bed preparation. Because lack of technical knowhow of preparation of seed bed, so they bring from outside.

More technological gap in the Use of chemical fertilizers (82.33%), because majority of the chilli farmers had applied nitrogen, phosphorus and potassium fertilizers more than recommended quantity, respectively. The reason given by the respondents for this behavior was that more fertilizer would give more yields. Also many respondents did not have the correct knowledge about the recommended fertilizer dosage. Possible reason for over adoption of all the three (N, P and K) fertilizers might be 'lack of knowledge', most of them believed that application of recommended quantity of N,P,K fertilizer was not sufficient to get the expected yield and hence over adoption.

More than half (62.82%) of the respondents were shown technological gap in the seed treatment and 37.18 per cent of respondents were practicing seed treatment on their own because they felt that it reduces the pest and disease attack. And also farmers although knew the importance of seed treatment but were not aware of the technical knowhow involved in it. Major reasons attributed were "lack of knowledge" and "no significant effect on yield".

Further it was observes that the spacing was adopted by majority (45.00%) of the respondents as per recommendation. The possible reason might be that in chilli cultivation the inter cultivation practices like harrowing, earthing up and weeding are very important operations for higher yield. There is technological gap of 55.00 per cent and also over adopted by per cent of the respondents. Spacing is an important practice which decides the number of plants per acre in turn the yield level; hence farmers should be educated about the recommended spacing and its advantages.

We found that (48.23%) of technological gap in the plant protection measures, Application of pesticides and fungicides were over adopted by 52.77 per cent of respondents. The common tendency prevailing among the farmers that higher dose chemicals spraying leads to a better control of pest and disease effectively. This might be the probable reason to go for more number of sprays. In addition to this most of the Chilli cultivators did not have the correct knowledge about the chemical application. Most of the respondents adopted more than recommended number of chemical sprays and higher dosage of spray concentration. The only reason attributed for this was fear of crop loss.

It can be concluded that majority of the respondents (45.83%) belonged to medium technological gap category but the present study indicated that pesticides and fungicides were applied more than recommended quantity by the respondents. The result has brought out the alarming situation prevailing in the study area. That is to say, if this situation continues then the pests become highly resistant and become difficult to control ultimately farmers have to stop growing Chilli due to high cost of cultivation and low quality products due to residual effect of chemicals. Hence, there is need to propagate the IPM practices by the concerned extension agencies on top priority.

There was gap found (38.23%) of use of organic manures, Less than half (61.77%) of the respondents did not applied FYM as recommended. The reason for lesser application of manure was non-availability of required quantity FYM in the village. The reason attributed by them was 'non-availability of FYM'. It was observed in the study area that cattle population was declining over the years due to high cost of their maintenance, hence resulting in reduced availability of FYM. The produced FYM might not be sufficient to meet the individual's requirement.

In Transplanting there was (36.50%) of gap observed, reasons were lack of knowledge, sowing is easy method because harvest can done single time itself, usually followed by small farmers.

Two to three seedlings per hill was not adopted by the chilli growers so gap in the seedlings per hill (28.50%) , The major reasons attributed were 'lack of knowledge' and 'lack of conviction' by the respondents.

It could be seen from the table 2 that there is one fourth of technological gap of observed in the recommended varieties is (35.33%); farmers use the other than recommended varieties because of their higher yield comparatively than the recommended.

From table 2 we can observe that there is only 25.68% of technological gap in use of planofix. Because of lack of knowledge others respondents not used.

Table 2. Practices-wise technological gap about Chilli cultivation practices

n=120

S. No.	Chilli cultivation	T G
	Recommended varieties ; Guntur, Byadagi, Pusa jwala, KDSC-1	35.33
	Use of Organic manure; FYM-25tonnes/ha	38.23
	Seed rate ; 1250gm/ha	88.50
	Seed treatment ; Azospirillium 400gm/liter	62.83
	Spacing ;75*45cm	55.00
	Seedbed preparation	85.32
	Seedlings per hill ;2-3 Seedlings/hill	28.50
	Transplanting	36.50
	Use of chemical fertilizers ;150:75:75 kg/ha	82.33
	Use of planofix ;50PPM, NAA @ flowering stage	25.68
	Use of weedicides; Butaclor (Pre) 1.5litre/ha	86.00
	Plant protection measures	48.23

CONCLUSION

It can be concluded that majority of the respondents (45.83%) belonged to medium technological gap category, but the present study indicated that more technological gap observed in the seed rate 88.50 per cent of, followed by use of weedicides 86.00 per cent and in chemical fertilizer 82.33 per cent by the respondents. The result has brought out the alarming situation prevailing in the study area. That is to say, if this situation continues then the pests and diseases become highly resistant and become difficult to control ultimately farmers have to stop growing chilli due to high cost of cultivation and low quality produce due to residual effect of chemicals. Hence, there is need to propagate the IPM practices by the concerned extension agencies on top priority.

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