

RESEARCH ARTICLE :

Knowledge and adoption of recommended chilli production technology by the farmers of Raipur district

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SUMMARY : The investigation was carried out in Dharsiwa block, Raipur district of Chhattisgarh state in 2010-2011, to assess the level of knowledge and extent of adoption of recommended practices of chilli production technology. From the selected block, twelve villages and from each village ten chilli growing farmers who were growing chilli for at least last two years were selected. Data were recorded through interview schedule and analyzed to use appropriate statistical methods. The study revealed that the maximum (38.33%) respondents had medium level of overall knowledge about chilli production technology. Whereas practice wise majority (55.00%) of the respondents had high level of knowledge regarding recommended field preparation, majority (52.50%) of the respondents had medium level of knowledge regarding irrigation management, and majority (50.83%) of the respondents had low level of knowledge regarding recommended weed management, while 43.33 per cent respondents had low extent of adoption about recommended chilli production technology. So far as practice wise extent of adoption is concerned, maximum (32.50%) respondents had high extent of adoption regarding recommended field preparation, majority (50.00%) of the respondents had medium extent of adoption regarding irrigation management and majority (59.17%) of the respondents had low level of extent of adoption regarding recommended weed management practices.

KEY WORDS:

Chilli production, Knowledge, Adoption

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BACKGROUND AND OBJECTIVES

Agriculture has been and will continue to be the life line of the Indian economy. As the largest private enterprise in India, agriculture contributes nearly one fourth of the national G.D.P., sustains livelihood of about two third of the population and is the backbone of agro-based industry. In food sector alone, agriculture contributes about 250 thousand

crore rupees annually.

Through the update of modern agricultural technology, India has moved from an era of chronic food shortage and begging bowl status upto 1960 to food self sufficient and even food exports by the year 1986 when FPO was established. The productivity gain is nearly 3.3 times in food grain, 1.6 times in fruits, 2.1 times in vegetables, 5.6 times in fish,

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1.8 times in milk and 4.8 times in eggs (Anonymous, 2004).

Asia produces 65.8 per cent of world green chillies and pepper and stands at the top (Anonymous, 2007). India is the largest producer and contributes 25 per cent to total world production (Anonymous, 2012 b). It is also largest consumer and exporter of chilli. India is the major exporter in the world market and the total export of chillies from India is on an average around 10-15 per cent of total production (Anonymous, 2012 a). India has produced about 13.2 million tons of chilli during 2009-10 (Anonymous, 2012 a). It is observed from the yield of chilli, that the average national yield is 1199.28 kg hectare⁻¹ (Anonymous, 2009). Chhattisgarh state has 31.576 thousand hectare area, 195.473 thousand metric ton production of chilli (Anonymous, 2011). Similarly Raipur district is the capital of the state having regular and heavy demand of vegetables. Dharshiva block had the highest chilli cultivation in Raipur district and hence, the block was considered for the study with the objective to assess the extent of knowledge and adoption of recommended chilli production technology in Dharshiva block of Raipur district.

RESOURCES AND METHODS

The investigation was conducted during the year 2010-11 in Dharsiwa block of Raipur district of Chhattisgarh state. From this block, twelve villages and from each village ten chilli growers (who were growing chilli for at least last two years) were selected purposively as respondents. Thus, total 12x10= 120 respondents were identified for the study.

The data were collected through a well-structured and pre tested interview schedule. The researcher personally met with the respondents and explained to them about the purpose of the study to build the rapport. Data were recorded through interview schedule and analyzed to use appropriate statistical methods *viz.*, mean, average, frequency, per cent and standard deviation etc.

For the study of knowledge, ten recommended practices of chilli production technology *viz.*, improved varieties, seed rate, seed treatment, field preparation, time of sowing, method of sowing, recommended dose of chemical fertilizers, irrigation management, method of weed control and plant protection were selected. The weightage of 3 for high knowledge, 2 for medium knowledge and 1 for low knowledge were assigned for

each practice. The total score obtained by the respondents from all ten practices was the knowledge score of the individual respondent.

The adoption behaviour of chilli production technology refers to the extent of adoption of recommended improved farm practices. The questions were asked regarding extent of adoption of improved varieties, seed rate, seed treatment, field preparation, time of sowing, method of sowing, recommended dose of chemical fertilizers, irrigation management, method of weed control and plant protection.

Level of knowledge/ extent of adoption	Score
Low	1
Medium	2
High	3

The weightage of 3 for high adoption, 2 for medium adoption and 1 for low adoption of each practice were assigned.

Scoring was done for level of knowledge and extent of adoption as follows.

The total score obtained by the respondent from all the ten practices was the adoption score of individual respondent.

The categorization was based on the mean. The following categories were used in the study.

Sr. No.	Category	Scores
1.	Low	(< $\bar{X} - S.D.$)
2.	Medium	(in between $\bar{X} \pm S.D.$)
3.	High	(> $\bar{X} + S.D.$)

Mean score were calculated by the following formula:

$$\text{Mean score} = \sqrt{\frac{(x - m)^2}{N}}$$

OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Overall level of knowledge possessed by the chilli growers about recommended chilli production technology :

Table 1 shows that the maximum (38.33%)

respondents had medium level of knowledge about chilli production technology followed by low level of knowledge (35.00%) and high level of knowledge (26.67%). Study supported the findings of Vidhate (1997) who reported majority (58.00%) of ginger growers with medium level of knowledge about recommended package and practices of farmers of Satna district, Choudhary and Sharma (2012) reported 69.00 per cent IVLP beneficiaries and non-beneficiaries respondents had medium level of overall knowledge about recommended chilli cultivation practices at Ajmer. Raghavendra (2005) reported 61.66 per cent of respondents possessed medium level of knowledge about recommended cauliflower production technology at Belgaum district of Karnataka states.

Practice wise level of knowledge of the respondents about recommended chilli production technology :

It is evident from the Table 2 that out of 120 respondents, higher percentage of the respondents (49.17%) had high level of knowledge about recommended improved varieties of chilli, while 30.83 per cent chilli growers had medium level of knowledge and 20.00 per cent had low level of knowledge. The cumulative knowledge of this particular practice was observed as 76.33 per cent among the total respondents.

Regarding recommended field preparation, majority (55.00%) of the respondents had high level knowledge, while 27.50 per cent had medium level of knowledge

and 17.50 per cent had low level of knowledge. The cumulative knowledge of this particular practice was observed as 79.00 per cent among the total respondents.

Maximum (48.33%) respondents had medium level of knowledge followed by 39.17 per cent had low and 12.50 per cent had high level of knowledge of recommended dose of chemical fertilizers. The cumulative knowledge of this particular practice was observed as 57.67 per cent among the total respondents.

About irrigation management, the majority (52.50%) of the respondents had medium level of knowledge followed by 35.83 per cent respondents with low and 11.67 per cent with high level of knowledge of irrigation management. The cumulative knowledge of this particular practice was observed as 58.67 per cent among the total respondents.

Regarding recommended weed management, majority (50.83%) of chilli growers had low level of knowledge followed by 32.50 per cent with medium and 16.67 per cent with high level of knowledge. The cumulative knowledge of this particular practice was observed as 55.33 per cent among the total respondents.

Higher percentage of respondents (43.33%) had medium level of knowledge of insect control methods followed by 35.00 per cent having low and 21.67 per cent having high level of knowledge. The cumulative knowledge of this particular practice was observed as 62.33 per cent among the total respondents.

Table 1 : Distribution of respondents according to overall level of knowledge about recommended chilli production technology

Sr. No.	Level of knowledge	Frequency	Percentage
1.	Low	42	35.00
2.	Medium	46	38.33
3.	High	32	26.67
	Total	120	100

Table 2 : Distribution of respondents according to practice wise level of knowledge of the respondents about recommended chilli production technology

Sr. No.	Recommended practices	Level of knowledge			Mean score	Cumulative percentage
		Low	Medium	High		
1.	Improved varieties	24(20.00)	37(30.83)	59(49.17)	2.29	76.33
2.	Field preparation	21(17.50)	33(27.50)	66(55.00)	2.37	79.00
3.	Dose of chemical fertilizers	47(39.17)	58(48.33)	15(12.50)	1.73	57.67
4.	Irrigation management	43(35.83)	63(52.50)	14(11.67)	1.76	58.67
5.	Weed management	61(50.83)	39(32.50)	20(16.67)	1.66	55.33
6.	Insect control methods	42(35.00)	52(43.33)	26(21.67)	1.87	62.33
7.	Disease control methods	55(45.83)	41(34.17)	24(20.00)	1.74	58.00
Average mean score					1.91	63.67

Figures in parenthesis indicated percentage

Regarding disease control methods, most of the respondents (45.83%) had low level of knowledge followed by 34.17 per cent with medium level of knowledge and 20.00 per cent of them with high level of knowledge. The cumulative knowledge of this particular practice was observed as 58.00 per cent among the total respondents.

It is also observed from Table 2 that only two practices had higher mean score than the average mean score 1.91 *i.e.*, recommended improved varieties and recommended field preparation. It can be concluded from the above findings that the maximum respondents had higher knowledge regarding these two practices. Choudhary and Sharma (2012) reported IVLP beneficiary respondents possessed remarkable knowledge about following aspects namely, irrigation management, application of nitrogenous fertilizers, quantity of FYM, use of FYM and chemical fertilizer use in cultivation of chili in Saradhana and Myapurat block Ajmer district. The findings are in conformity with the results of Venkataramulu *et al.* (2010), who reported that majority (89.17%, 90.00% and 84.17%) of the respondents had applied nitrogen, phosphorus and potassium fertilizers more than recommended quantity/ maximum respondents apply the imbalanced fertilizers by the chilli grower farmers of Guntur district of Andhra Pradesh. Singh and Kaur (2004) and Waman *et al.* (1996) also found almost similar results on his study.

Overall extent of adoption about recommended chilli production technology :

The mean values of extent of adoption about recommended chilli production technology are presented in Table 3. From the data, it is opined that the maximum (43.33%) respondents had low extent of adoption followed by medium (40.8%) and high (15.83%) extent of adoption. Sidram (2008) reported in Gulbarga district of Karnataka state, the majority of pigeonpea growers had medium level of overall adoption of recommended practices, Venkataramulu *et al.* (2010) reported in villages of Guntur district of Andhra Pradesh, the majority 68.33 per cent of the chilli growers belonged to medium adoption category with mean adoption score of 9.3. Raghavendra (2005) reported in Belgaum district of Karnataka, majority 53.30 per cent cauliflower growers belonged to medium adoption category.

Practice wise extent of adoption of recommended chilli production technology :

Table 4 reveals that out of 120 respondents, most of the respondents (45.00%) had medium extent of adoption about recommended improved varieties followed by 30.00 per cent with low and 25.00 per cent respondents with high extent of adoption. The cumulative adoption of this particular practice was observed as 65.00 per cent among the total respondents.

Regarding recommended field preparation, higher percentage (41.67%) of the respondents had medium

Table 3 : Distribution of respondents according to overall extent of adoption about recommended chilli production technology

Sr. No.	Extent of adoption	Frequency	Percentage
1.	Low	52	43.33
2.	Medium	49	40.83
3.	High	19	15.83
	Total	120	100

Table 4 : Distribution of respondents according to practice wise extent of adoption of recommended chilli production technology

Sr. No.	Recommended practices	Extent of adoption			Mean score	Cumulative percentage
		Low	Medium	High		
1.	Improved varieties	36 (30.00)	54 (45.00)	30 (25.00)	1.95	65.00
2.	Field preparation	31 (25.83)	50 (41.67)	39 (32.50)	2.07	69.00
3.	Dose of chemical fertilizers	58 (48.33)	51 (42.50)	11 (09.17)	1.61	53.67
4.	Irrigation management	53 (44.17)	60 (50.00)	07 (5.83)	1.62	54.00
5.	Weed management	71 (59.17)	38 (31.66)	11 (9.17)	1.50	50.00
6.	Insect control methods	54 (45.00)	46 (38.33)	20 (16.67)	1.72	57.33
7.	Disease control methods	61 (50.83)	44 (36.67)	15 (12.50)	1.62	54.00
	Average mean score				1.72	57.57

extent of adoption, followed by 32.50 per cent having high and 25.83 per cent having low extent of adoption. The cumulative adoption of this particular practice was observed as 69.00 per cent among the total respondents.

The most of the respondents (48.33%) had low extent of adoption followed by 42.50 per cent with medium and 09.17 per cent respondents with high extent of adoption of recommended dose of chemical fertilizers. The cumulative adoption of this particular practice was observed 53.67 per cent among the total respondents.

About recommended irrigation management, the majority 50.00 per cent respondents had medium extent of adoption followed by 44.17 per cent having low and 5.83 per cent respondents having high extent of adoption. The cumulative adoption of this particular practice was observed as 54.00 per cent among the total respondents.

Regarding recommended weed management, the majority 59.17 per cent of chilli growers had low extent of adoption followed by 31.66 per cent respondents having medium and 9.17 per cent respondents having high extent adoption of recommended dose of fertilizers. The cumulative adoption of this particular practice was observed as 50.00 per cent among the total respondents.

The most of respondents (45.00%) had low extent of adoption of recommended insect control methods while 38.33 per cent respondents had medium and 16.67 per cent had high extent of adoption. The cumulative adoption of this particular practice was observed as 57.33 per cent among the total respondents.

Regarding recommended disease control methods, majority (50.83%) of the respondents had low extent of adoption followed by 36.67 per cent respondents with medium and 12.50 per cent with high extent of adoption. The cumulative adoption of this particular practice was observed as 54.00 per cent among the total respondents.

It also revealed from the Table 4 that only two practices had higher mean score than the average mean score 1.72 *i.e.*, recommended improved varieties and recommended field preparation. It can be concluded from the above findings that the maximum respondents had higher adoption regarding these two practices, Hanumanaikar *et al.* (2009) revealed the chilli growers adopted recommended variety, sowing time, irrigation as per the recommendation, almost all the respondents adopted application of chemical fertilizer in Tunga Bhadra project area of Bellary district of Karnataka, Soni (2012) also reported in Surguja district of Chhattisgarh state, that maximum (57.25%) cauliflower growers had medium

extent of adoption of recommended selection of seed, minimum (11.25%) respondents had low extent of adoption of recommended weed control methods. Almost similar findings were reported in soybean production technology by Kumar (2009) at Dharwad district of Karnataka state, Tomar (2005) Similarly, Adhikari (2007) also reported adoption behaviour of rice growers in Hoshangabad district of Madhya Pradesh reported similar results on barseem production technology at Ashta block of Sehore district.

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