

KNOWLEDGE AND CONSTRAINTS IN SCIENTIFIC CULTIVATION OF CHILLI AMONG THE FARMERS

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ABSTRACT

The present study was undertaken to study the knowledge of recommended practices of chilli cultivation and problems faced by the growers and ex-growers of selected districts of Punjab. A list of chilli growers in each selected village having minimum of half acre of land under chilli was prepared and a proportionate sample of two hundred chilli growers was selected. In addition to this all ex-chilli growers were selected from the selected villages. It was found that almost half of the respondents (49.0%) were of the age group 50-62 years, 53.5 per cent were educated up to middle, 54.5 per cent had an operational land holding ranging from 3-12 acres, 61.5 per cent had area under chilli up to 1 acre, 46.5 per cent had annual income up to Rs. 1,10,000, 58.5 per cent had experience of chilli cultivation ranging from 1-2 years. Nearly one-third (31.0%) of respondents had no extension contacts during last year and 47.0 per cent had medium level of scientific orientation. Majority of the respondents had knowledge regarding earthing up, sowing time, transplanting time, weeding, recommended varieties and seed rate. Almost one-third to half of the respondents had knowledge regarding potassium dose, seed treatment, split dose of nitrogen, insects, pest's diseases and their control, nitrogen dose, farm yard manure dose and phosphorus dose. The major constraints expressed by chilli growers were heavy price fluctuation of the produce, no support price of chilli, lack of knowledge of raising nursery, low price at peak time and high cost of hybrid seeds. The major constraints expressed by ex-chilli growers were, comparatively decrease in the production of chilli, intensive requirement of labour at picking and low price at peak time.

INTRODUCTION

Chilli is the green or dried ripe fruit of pungent form of *capsicum annum L.*

In India chilli has become almost an essential article of diet of rich and poor. The total output of chillies in the world is estimated at about 25 lakh tones. At present, India is largest producer of chillies in world (about 8.5 lakh tones). The world consumption of chilli is going up due to the increasing popularity of ethnic foods. The increased availability of oleoresins and spice oils of chilli has also enhanced its consumption in various food preparations.

Among Indian states, Andhra Pradesh is the leading state having highest area, output and productivity of chilli. Karnataka and Maharashtra ranked second and third in area and production of chilli respectively. Although the Punjab ranked 2nd in production of chillies, which is 1573 Kg per hectare, the area under chilli is very less which is

only 4.7 thousand hectare. So there is a lot of scope increasing the chilli area. Moreover the yield of chilli in Punjab is 1573 Kg per hectare which is quite low when compared to package of practices yield (250-300 qtls per hectare). The technological gap may be one of the reasons for the low yield. Keeping this in mind, the present investigation was undertaken to study the socio-economic characteristics of chilli growers, the knowledge of chilli growers regarding recommended chilli cultivation practices and the constraints faced by chilli growers and the ex-chilli growers who have discontinued the chilli cultivation.

RESEARCH METHODOLOGY

The study was conducted in Punjab State . The ex-post-facto research design was used for study. Two districts of Punjab namely Amritsar and Sangrur were selected on the basis of maximum area and production under chilli crop. From each of district, three blocks and from each block three

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villages having maximum area under chilli crop were selected, therefore a total number of eighteen villages were selected. All the farmers of eighteen selected villages, who had cultivated chilli in previous year on a minimum of half acre of land constituted the population for the study. A list of chilli growers in each selected village was prepared with the help of local Leaders, sarpanch and Agricultural development officers. A proportionate random sample of chilli growers from each selected village was taken to make total sample size as 200. Data were collected with the help of structured schedule using interview technique.

RESULTS AND DISCUSSION

Socio-personal characteristics of chilli growers:

The data in Table 1 reveal that 49.0 per cent of the respondents were of the age group 50-62 years. It was followed by age group of 40-50 (35.5%) and remaining 15.5 per cent were of age group 27-40 years. The data further reveal that 53.5 per cent of the respondents had education up to middle and

32.0 per cent were illiterates.

The data in Table 1 further reveal that 54.5 per cent respondents had operational land holding between 3-12 acres, whereas 33.5 per cent and 12.0 per cent had land holding between 12-23 acres and 23-58 acres respectively. It was found that 54.5 per cent respondents had cultivated chilli on an area of upto 1 acre. Since chilli cultivation is a skillful enterprise, it might be the reason that respondents having less experience had not taken the risk to cultivate it on more than one acre. The data further revealed that 31.0 per cent respondents cultivated chilli on an area ranging from 2-4 acres.

The data in the Table 1 reveal that 46.5 per cent respondents had annual income upto Rs. 1,10,000 and 34.5 per cent respondents had annual income between Rs. 1,10,000 to 1,90,000. The data further depict that 58.5 per cent respondents had experience of chilli cultivation ranging from 1-2 years and 32.5 per cent had experience ranging from 2-4 years. Around one third of the respondents had no extension contacts during last year, whereas 28.0

Table 1. Socio-personal characteristics of chilli growers (n=200)

S. No	Characteristics	Category	f	%
1	Age	i. 27-40 Years	31	15.5
		ii. 40-50 Years	71	35.5
		iii. 50-62 Years	98	49.0
2	Education	i. Illiterate	64	32.0
		ii. Up to middle	107	53.5
		iii. High and Senior secondary	21	10.5
		iv. Above senior secondary	8	4.0
3	Operational land holding	i. 3-12 acres	109	54.5
		ii. 12-23 acres	67	33.5
		iii. 23-58 acres	24	12.0
4	Area under chilli	i. Up to 1 acre	123	61.5
		ii. 1-2 acre	62	31.0
		iii. 2-4 acres	15	7.5
5	Annual income	i. Up to Rs. 1,10,000	93	46.5
		ii. Rs.1,10,000-Rs.1,90,000	69	34.5
		iii. Above Rs. 1,90,000	38	19.0
6	Experience of chilli cultivation	i. 1-2 years	117	58.5
		ii. 2-4 years	65	32.5
		iii. 4-8 years	18	9.0
7	Extension contacts (during last year)	i. No extension contacts	62	31.0
		ii. 1-2	56	28.0
		iii. 3-4	47	23.5
		iv. Above 4	35	17.5
8	Scientific orientation	i. Low (2-6)	72	36.0
		ii. Medium (6-10)	94	47.0
		iii. High (10-12)	34	17.0

per cent had contacted the extension workers only once or twice and 23.5 had contacted only 3 times or 4 times.

Knowledge about recommended chilli cultivation practices

Table 2 reveals that majority of the respondents possessed knowledge with regard to practices like earthing up (99.0%), sowing time

(97.5%), weeding (85.5%), recommended varieties (87.9%) and seed rate (85.5%). Nearly half of the respondents possessed knowledge with regard to practices like phosphorus dose (55.0%) and F.Y.M. dose (46.0%) The reason that could be attributed to the above findings is that chilli cultivation is a skillful and special enterprise and requires specific knowledge of chilli cultivation.

It was also observed that small percentage of

Table 2. Knowledge of the respondents about recommended chilli cultivation practices (n=200)

S. No	Cultivation practices	Knowledge of recommended practices			
		Yes		No	
		f	%	f	%
1	Recommended varieties	174	87.0	26	13.0
2	Seed rate	170	85.0	30	15.0
3	Seed treatment	62	31.0	138	69.0
4	Spacing	43	21.5	157	78.5
5	Sowing time	195	97.5	5	2.5
6	Transplanting time	189	94.5	11	5.5
7	F.Y.M	92	46.0	108	54.0
8	Dose of chemical fertilizer Applied:				
	Nitrogen	85	42.5	115	57.5
	Phosphorus	110	55.0	90	45.0
	Potassium	60	30.0	140	70.0
9	Split dose of nitrogen	62	31.0	138	69.0
10	Earthing up	198	99.0	2	1.0
11	Weeding	187	93.5	13	6.5
12	Insects, pests, diseases and their control	82	41.0	118	49.0

the respondents had knowledge about practices like spacing (21.5%), diseases, insects, pests and their control (41.0%), split dose of nitrogen (31.0%), seed treatment (31.0%) and potassium dose (30.0%). The lack of knowledge regarding the percentage of nutrients available in the chemical fertilizers and no or less contact with the extension personnel might be the reasons for the above finding. The above findings are in consonance with the findings obtained by Sakharkar *et al.* (1992) which revealed that respondents were aware of the simple cultivation practices and were not aware of complex practices like seed treatment, fertilizer application

and plant protection measures.

The knowledge about different aspects of chilli cultivation was studied. The aspects undertaken were recommended varieties, cultural practices, FYM and chemical fertilizer application and plant protection measures. Out of 26 items/statements in the knowledge test, 4 statements were related to knowledge about recommended varieties, 13 statements were related to knowledge about different cultural practices, 6 statements were related to knowledge about farm yard manure and chemical fertilizer application and 3 statements were related to knowledge about plant protection. A

Table 3. Mean knowledge score of the respondents about different aspects of chilli cultivation (n=200)

S.No	Aspects of chilli cultivation	Max knowledge score	Mean Knowledge score
1	Recommended varieties	4	3.48
2	Cultural practices	13	7.92
3	FYM and Chemical fertilizer	6	2.35
4	application	3	1.23
	Plant protection measures		

perusal of the data in Table 3 reveal that the mean knowledge score of the respondents about recommended varieties was 3.48, where as for cultural practices it was 7.92, for FYM and chemical fertilizer application it was 2.35. In plant protection measures the mean knowledge score was 1.23. So it is clear from the above findings that the respondents had a fairly high knowledge about recommended varieties, whereas they have medium to low level of knowledge about cultural practices and chemical fertilizer application and plant protection measures.

Distribution of respondents in various knowledge categories

Table 4 reveals that 29.0 per cent respondents had low level of knowledge, whereas 35.5 and 32.5 per cent respondents had medium and high level of knowledge regarding recommended chilli cultivation practices respectively. Thus it could be concluded that two third of the respondents had low to medium level of knowledge. These chilli growers might not be exposed to the improved technology and as a

Table 4. Distribution of respondents on the basis of their overall knowledge about chilli cultivation

(n=200)			
S.No	Category (knowledge score)	f	%
1	Low (11-16)	58	29.0
2	Medium (16-21)		
3	High (21-26)	77	38.5
		65	32.5

result only less per cent of them possessed high knowledge with regard to improved practices.

Constraints in chilli cultivation

The data presented in Table 5 reveal that 73.5 per cent respondents expressed heavy price fluctuation of the produce as the main constraint. It can be due to the fact that price of chilli ranges from Rs. 1 to Rs. 10 per kg. In the peak season of production it could be Rs. 1 per kg. At this price the farmers are not able to pay their picking charge

which is roughly Rs. 1 per kg. More than 60 per cent respondents expressed lack of knowledge of nursery raising as major constraint. Since raising nursery for chili requires special skill, so it is a tough job for farmers. The table further reveal that 61.5 per cent respondents expressed no support price of chilli as main constraint, 49.0 per cent, 29.5 percent and 21.0 per cent respondents expressed low price at peak time, high cost of hybrid seeds and high infestation of diseases, insects pests, as the major constraints, respectively.

Table 5. Constraints expressed by respondents in the cultivation of chilli*

(n=200)			
S. No	Constraint	f	%
1	Heavy price fluctuation of the produce	147	73.5
2	Lack of knowledge of raising nursery	135	67.5
3	No support price of chilli	123	61.5
4	Low remunerative price at peak time	98	49.0
5	High cost of hybrid seeds	59	29.5
6	High infestation of diseases, Insects, pests etc.	42	21.0
7	Non-availability of processing units.	36	18.0
8	Labour problem.	27	13.5

* Multiple response

An effort was also made to find out reasons for discontinuance of chilli cultivation by the farmers. The results presented in Table 6 reveal that 94.4 per cent of respondents expressed comparatively decrease in the yield of chilli as the reason for discontinuance of chilli cultivation. This was due to the fact that for hybrid chilli seed

production, minimum isolation distance is to be maintained. But because of the growing number of seed producers, they sometimes may not maintain this distance. Thus, seed impurities can lead to the above findings. Equal percentage of respondents (88.8%) expressed intensive requirement of labour at picking and low price at peak time as the main

Table 6. Reasons for discontinuance of chilli cultivation* (n=18)

S.No	Reasons	f	%
1	Comparatively decrease in the yield of hybrid chilli.	17	94.4
2	Intensive requirement of labour at picking.	16	88.8
3	Low price at peak time.	16	88.8
4	High competition in chilli cultivation.	14	77.7
5	Not a profitable enterprise.	12	66.6

* Multiple response

reasons for discontinuing chilli cultivation. These two constraints are interlinked as picking in chilli requires intensive labour and if the produce fetches poor return in the market, than chilli cultivation can turn out to be a non-profitable enterprise, which as a constraint was expressed by 66.6 per cent of the respondents. More than 75 per cent of the respondents expressed high competition in chilli as the main reason for discontinuing chilli cultivation.

CONCLUSION

Chilli growers need to be educated regarding the use of treated seeds, maintaining correct spacing and irrigating the crop at the recommended intervals. The farmers need to be educated and motivated to use the correct doses of fertilizers and manures, so that they can get the high returns by reducing the expenditure. Since majority of the respondents expressed low price at peak time, so efforts should be made to develop some processing units so that farmers can sell their produce to these units at the

time of glut of produce. Majority of the respondents expressed lack of knowledge of raising nursery as major constraint, so extension personnel should organize method demonstration for nursery raising to improve the knowledge and skills involved.

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