Technological gap among Vegetable Growers

R.S. Suman[1]

Abstract

This research study was undertaken in Kullu district of Himachal Pradesh under ex-post facto research design. A sample of 600 vegetable growers representing 20 villages of Kullu and Manali was drawn using purposive random sampling technique. The results of the study indicate that the technological gap was found high in seed treatment, plant protection measures, water management, hoeing and weeding, field preparation and manure and fertilizer application, while, low technological gap was observed in recommended varieties and harvesting. The overall technological gap of the respondents in respect of vegetable production technology was found to be 35 per cent. The independent variables viz. cropping intensity, infrastructural experience, education, social participation, farm size, nature of irrigation, socio-economic status, economic motivation, innovativeness, knowledge about vegetable production technology, attitude towards vegetable production technology, source of information and extension participation were found statistically significant and negatively correlated with technological gap, whereas, age did not show any relationship with technological gap.

Introduction

It is indicated from previous research, that the farmers are less devoted towards vegetable production because the area is dominated by apple orchards and the economy of the farmers of the area depends in general on apple production. The adoption level of vegetable production was very low (9.33 %) (Suman, 2005), in spite of the fact, that the area is suitable for both vegetables and their seed production. The valley is a variable paradise for off-season cultivation of vegetables and flowers and this vast potential is under exploited. The summer being mild is suitable for many sub-tropical important vegetables. The farmers could be educated to harvest the gift of nature to raise their socio-economic status. Considering the opportunities available, it is necessary to understand the reasons for low level of adoption of vegetable production so that appropriate strategies could be suggested for the improvement of adoption level of the farmers for vegetables and their seed production leading to improvement in the economic condition of the farmers for a better life. Keeping this in view, the present study was designed with the following objectives;

[1] Scientist (Sr. Scale) IARI Regional Station, Katrain (Kullu Valley) H.P.

1. To study the demographic situation and socio-economic conditions of the farmers.
2. To study the technological gap between the recommended technologies and technologies adopted by the farmers.
3. To assess the constraints in vegetable production technologies and suggest remedial measures.

Methodology

The present study was conducted in the Kullu and Manali blocks of Kullu district of Himachal Pradesh selected purposively because of the dominance of vegetable production system in Kullu Valley. Thereafter, twenty villages including ten from each block were selected randomly. From each village, 15 rich resource farmers (RRF) and 15 poor resource farmers (PRF) were selected on the basis of stratified random sampling. Thus, a total sample of 600 respondents (vegetable growers) in total was selected for the final interview. The data were collected personally with the help of pretested schedules. The technological gap was computed on a three-point scale of full, partial and no gap.

Results and Discussion

1. Technological Gap: The data regarding technological gap in different practices of vegetable cultivation (for Multiple crops i.e. cabbage, cauliflower, radish, brinjal, summer squash, tomato, cucumber) is summarized in Table 1.

Table 1: Average Technological Gap in different Components of Vegetable Production technology (N = 600)

S. No.	Different components of vegetable production technology	Average tech. gap	Rank
1	Field preparation	35.29	V
2	Recommended varieties	6.24	X
3	Sowing time	9.52	VII
4	Seed rate	8.51	VIII
5	Seed treatment	89.12	I
6	Spacing	7.45	IX
7	Manure and Fertilizers application	31.25	VI
8	Water management	53.46	III
9	Hoeing and Weeding	51.26	IV
10	Plant protection	86.57	II
11	Harvesting	3.64	XI
	Overall gap	**34.75**	

Table 1 reveals that the average technological gap was found varying from component to component and ranged from 3.64 per cent to 89.12 per cent. The maximum gap was observed in seed treatment (89.12 per cent) followed by plant protection (86.57 per cent), water management (53.46 per cent), hoeing and weeding (51.26 per cent), field preparation (35.29 per cent), manure and fertilizers application (31.25 per cent), sowing time (9.52 per cent), seed rate (8.51 per cent). The minimum average gap was observed in recommended varieties (6.24 per cent) followed by harvesting (3.64 per cent). It could be further inferred that there was a high (above 66 per cent) technological gap in seed treatment and plant protection. There was a medium technological gap (between 33 to 66 per cent) in water management, hoeing and weeding and field preparation. A low technological gap (below 33 per cent) was observed in field preparation, manure and fertilizer application, sowing time, seed rate, recommended varieties and harvesting. The overall technological gap against recommended production technology was found to be 34.75 per cent.

2. Relationship between selected characteristics of Vegetable Producers and Technological Gap

The data on cause and effect relationship between technological gap and the selected 14 situational, personal, socio-economic, psychological and communication characteristics of vegetable producers are presented in Table 2. Out of 14 independent variables, 13 variables were observed to be negatively and significantly related to technological gap in adoption of vegetable production technology.

2.1. Relationship of Situational Variables with Technological Gap: It is revealed from Table 2 that cropping intensity and infrastructural experience were found negative but they had a significant relationship with the technological gap having "r" value -0.42615 and -0.35812 respectively. This indicates that as the cropping intensity and infrastructural experience increased, the technological gap decreased in adoption of vegetable production technology.

2.2. Relationship of Personal Variables with Technological Gap: Table 2 revealed that out of two personal variables, education was found to have significant relationship with technological gap having "r" value -0.23546. This means that as the education level of the vegetable producers' increased, the technological gap in adoption of vegetable production technology decreased. The variable 'age' had no significant relationship with technological gap.

Table 2: Relationship between Technological Gap and Independent Variables

S.No.	Independent variables	Correlation coefficient ('r' value)
A.	**Situational Variables**	
1	Cropping intensity	-0.42615 **
2	Infrastructural experience	-0.35812 **
B	**Personal Variables**	
3	Age	-0. 00497 N.S.
4	Education	-0. 23546 **
C	**Socio-economic Variables**	
5	Social participation	-0. 19865 *
6	Farm Size	-0. 41256 **
7	Nature of irrigation	-0. 39658 **
8	Socio - economic status	-0. 55325 **
D	**Psychological Variables**	
9	Economic motivation	-0. 39657 **
10	Innovativeness	-0. 55698 **
11	Knowledge about vegetable production technology	-0. 71546 **
12	Attitude towards vegetable production technology	-0. 36589 **
E	**Communication Variables**	
13	Sources of information	-0. 35624 **
14	Extension participation	-0. 58625 **

* = Significant at 5 per cant level.

** = Significant at 1 per cent level.

Education opens the faculty of thoughts and knowledge for an individual which in turn helps the individual to take rational decisions. They use education to improve exposure to scientific farming, increase efficiency and interest which results in high adoption. Social participation might have contributed towards formulation of favourable attitude, reflecting in lowering down the technological gap.

2.3. Relationship of Socio-Economic Variables with Technological Gap: In table 2 results show that three variables viz. farm size (r = -0.41256), nature of irrigation (r = -0.39658) and socio-economic status (r = -0.55325) at 5 per cent level and social participation (r = -0.19865 at 1 per cent level) had negative and significant correlation with technological gap indicating that as the farm size, nature of

irrigation, socio-economic status and social participation of vegetable producers' increased, the technological gap in adoption of vegetable production technology decreased. Socio-economic status of farmers enhances his extent of adoption of various innovative technologies resulting in automatic reduction in technological gap.

2.4. Relationship of Psychological Variables with Technological Gap: It is clear from Table 2 that four psychological variables like economic motivation, innovativeness, knowledge about vegetable production technology and attitude towards vegetable production technology were found to have negative and significant relationship with the technological gap having their "r" value -0.39657, -0.55698, -0.71546 and -0.36589 respectively. It means that as economic motivation, innovativeness, knowledge about vegetable production technology and attitude towards vegetable production technology of the farmers' increases, the technological gap in adoption of vegetable production technology decreases.

2.5. Relationship of Communication Variables with Technological Gap: It is observed from Table 2 that two communication variables viz. source of information (r = -0.35624) and extension participation (r = -0.58625) were found negative and significantly correlated with technological gap in adoption of vegetable production technology. It indicates that as source of information and extension participation of vegetable producers' increases, the technological gap decreases in adoption of vegetable production technology. The use of various communication sources thereby motivates in adoption of technology, which in turn lowers down the technological gap.

Conclusion

The average technological gap in different components ranged from '3.64' per cent to '89.12' per cent. The minimum average gap was observed in harvesting (3.65 per cent), whereas maximum average technological gap was observed in seed treatment, followed by plant protection (86.57 per cent), water management (53.46 per cent), hoeing and weeding (51.26 per cent), field preparation (35.29 per cent), manure and fertilizer application (31.25 per cent), sowing time (9.52 per cent), seed rate (8.51 per cent). The minimum average gap was observed in recommended varieties (6.24 per cent) followed by harvesting (3.64 per cent). Of 14 independent variables, 13 variables namely, cropping intensity, infrastructural experience, education, social participation, farm size, nature of irrigation, socio-economic status, economic motivation, innovativeness, knowledge about

vegetable production technology, attitude towards vegetable production technology, source of information and extension participation were found negatively and significantly related with technological gap indicating that any increase in these was found to decrease technological gap whereas, age did not show any significant relationship with technological gap indicating that there was no significant influence of age on technological gap in adoption of vegetable production technology. The remedial measures suggested by the vegetable producers include proper training as per their requirement, availability of quality seeds at affordable rates and assistance in marketing,

References

Dudey, V. K., Singh, S. B., Saini, R., Saini, S. P. S. (1981). Gap and Constraints analysis of wheat production. *Indian J. of Agric. Res.*, **15** (1):17.

Shriballabh, Shrivastava, J. P., and Pal, M. (1991). Technological gap in adoption of oilseed crops. *Maha. J. of Extn. Edn.* **10** (2): 340-42.

Suman, R.S. (2005). A Study of the adoption pattern of the farmers with regard to Improved vegetable production technologies in Kullu Valley, Himachal Pradesh. Paper presented in National Seminar on Green to Evergreen – Challenges to Extension Education, December 15-17, 2005.

✡ ✡ ✡