Problems faced by the farmers in adoption of protected vegetable cultivation in Punjab

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ABSTRACT

The study was done on the problems faced by farmers in protected cultivation of vegetables in six districts of Punjab viz Amritsar, Gurdaspur, Sangrur, Moga, Jalandhar and Kapurthala. A total of 150 respondents were selected for the study by probability proportion of number of farmers practicing protected vegetable cultivation from the selected districts and the data were collected by personally interviewing the respondents. The results revealed that majority of the respondents faced the problems related to high cost of establishment and technical knowhow of protected structures. Non-availability of minimum support price (MSP) for vegetable produce and problems related to labour were the other considerable obstacles in vegetable cultivation under protected structures. It was concluded that there was need to fix MSP for vegetable produce and training camps should be organized at the block or field level for the farmers.

Keywords: Protected cultivation; adoption; technical knowhow; vegetables; problems

INTRODUCTION

India is self-dependent to meet the food requirements of increasing population. But continuous cultivation of one or two traditional crops on same piece of land has some drastic effects on soil, environment as well as on farmers' income. Diversification through vegetable cultivation plays an important role in maintaining balance between soil fertility, crop yield and nutritional security(Sharma et al 2014). Vegetables are rich source of protein, carbohydrates, minerals and fibre (Weinberger and Lumpkin 2007). Due to short duration and high yield potential of vegetables these prove remunerative for the farmers. There is need to increase the production of vegetables (Balemi et al 2007). Protected cultivation technology is an alternative to improve the yield potential of vegetables to meet the vegetable requirements of incresing population.

These days for off-season production of vegetables and efficient utilization of natural resources along with superior quality with high production, protected cultivation is the best choice (Chandra et al 2000). During the last decade protected cultivation of vegetables has become a beneficial support to the farmers who can now use their small landholdings to produce tonnes of vegetables with the improved technologies. However there are many problems in the way of adoption of protected cultivation of vegetables by the farmers. Present investigations were thus made to identify the problems associated with the protected vegetable cultivation being faced by the farmers of Punjab.

METHODOLOGY

The study was carried out in six districts of Punjab viz Amritsar, Gurdaspur, Sangrur, Moga, Jalandhar and Kapurthala. A list of total vegetable growers in selected districts was prepared with the help of Department of Horticulture, Punjab. From this list 150 farmers who had adopted protected vegetable cultivation were selected according to probability proportion of number of farmers practicing protected vegetable cultivation in the selected districts. An interview schedule was designed for data collection.

The schedule dealt with the statements to know the constraints faced by the farmers in protected vegetable cultivation. The data were collected through personally interviewing the respondents and analyzed with the help of statistical tools such as frequency and percentage methods.

RESULTS and DISCUSSION

The problems faced by the respondents which hindered the production potential of vegetables under protected conditions were studied and are enlisted in Table 1.

Economic problems

For the adoption of any technology its availability at economic cost must be sound and according to the living standard of the end users ie farmers. In general the total cost for establishing the polyhouse is around Rs 30-34 lakhs/acre and for net house establishment it is Rs one lakh to one lakh fifty thousand/acre. Majority of the respondents (91.33%) perceived the problem of high cost of cladding material (pipes, sheet, fogger etc) and 82 per cent of respondents faced the problem of high price of seed/ seedling required for cultivation under protected structures while lack of finance was reported by 76.00 per cent respondents followed by 70.67 per cent respondents who faced the problem of getting loan from bank or Artiyas for the establishment of high cost protected structures. Thus high cost of cladding material (high initial cost) was major economic problem faced by the respondents in adoption of protected cultivation. Results are in line with the findings of Sreedhara et al (2013) and Singh and Sirohi (2006).

Technical problems

Majority of the farmers (78.67%) felt that nursery growing in protected conditions was a difficult task for them followed by 57.33 per cent who lacked knowledge about the material used and 54.00 per cent felt that it was a complicated task. Similar results were reported by Sreedhara et al (2013) and Johagirdar and Sundaraswamy (2002).

Marketing problems

Availability of market near the production unit and good price of produce are the basic priorities for successful marketing of any product. Under marketing problems majority of the respondents (74.67%) reported that high transportation charges to carry produce from field to market yard was the major problem followed by 74.00 per cent who were of the opinion that consumer was not paying appropriate price according to quality of produce, 70.67 per cent who opined that market yard for sale of produce was too far away from the field and 70.00 per cent reporting that local marketing of off-season produce was not available. For 56.00 per cent farmers industry picking only 'A' grade produce and minimum support price (MSP) on vegetable crops not being fixed for the produce were the other marketing problems. Thus non-availability of marketing, high transportation charges and less price of quality produce were the major constraints encountered by respondents in adoption of protected cultivation. Similar results were reported by Nakro and Kikhi (2006) and Kumar (2008).

Uncertainty of weather

Data reveal that for 84.00 per cent respondents high rainfall or hailstorm damaging the structure and displacement of the sheet due to high wind velocity were the major problems related to weather followed by 76.67 per cent who were of the view that diverse climate reduced the life span of the structure. Similar findings were made by Singh and Sirohi (2006).

Disease infestation

Disease infestation limits growth and yield level of any crop. For successful cultivation of a crop it is necessary that crop is free from diseases. High humidity in the protected structure was the major problem for 65.33 per cent respondents whereas 54.00 per cent said that high disease attack and 42.67 per cent said that nematode infestation were the problems related to disease incidences.

Problems in maintaining temperature

Temperature plays a critical role in crop improvement. Each crop requires optimal temperature conditions for growth and developmental processes like respiration, photosynthesis etc. Under this aspect 60.67 per cent farmers opined that it was difficult to maintain low temperature in summer whereas 46.67 per cent said that it was difficult to maintain high temperature in winter.

Non-availability of desired varieties

Good quality varieties are the basic criteria for high return and yield from a crop. Of the total 48.67 per cent respondents reported that limited number of varieties of vegetables was available in the market for

Table 1. Distribution of respondents according to different problems faced by them in protected cultivation of vegetables (n=150)

Problem	Frequency*	Percentage
Economic problems		
High cost of cladding material (pipes, sheet, fogger etc)	137	91.33
Non-availability or difficulty in getting subsidy	35	23.33
Lack of finance	114	76.00
Difficulty in getting loan from banks or Artiyas	106	70.67
Risk-oriented business	79	52.67
High cost of thermostat/cooler/generator etc	55	36.67
Costly seed/seedling	123	82.00
Technical problems		
Less knowledge about cultural practices	65	43.33
Lack of knowledge about material used	86	57.33
Lack of knowledge about direction of fitting rods or sheet on beds in low tunnel	27	18.00
Off-season nursery growing being difficult task	118	78.67
Complicated practice	81	54.00
Marketing problems		
Market yard for sale of produce too far away from field	106	70.67
Local marketing of off-season produce not available	105	70.00
High transportation charges to carry produce from field to market yard	112	74.67
Consumer not paying appropriate price according to quality of produce	111	74.00
Industry picking only 'A' grade produce	84	56.00
MSP on vegetable crops not fixed	84	56.00
Problems of uncertainty of weather		
High rain or hailstorm damaging the structure	126	84.00
Displacement of the sheet due to high wind velocity	126	84.00
Diverse climate reducing life span of the structure	115	76.67
Problems of disease incidences		
High disease attack	81	54.00
High humidity	98	65.33
Nematode infestation	64	42.67
Problems in maintaining temperature		
Difficult to maintain low temperature in summer months	91	60.67
Difficult to maintain high temperature in winter months	70	46.67
Non-availability of desired varieties		
Only few varieties available in the market for growing under protected structure	73	48.67
Non-availability of good quality varieties	26	17.33
Difficulty in infrastructure maintenance		
No repair service provided by the company	108	72.00
Non-availability of local mechanics	104	69.33
Non-availability of quality infrastructure material		
Quality material (plastic sheet, iron pipes, foggers, drippers etc) not available	117	78.00
Difficulty in getting specific 2 m loop-shaped iron rods	33	22.00
Poor quality material available at high cost	81	54.00
Problems related to power		
Frequent power cuts in summer	28	18.67
Lack of trainings		
Limited camps organized by government agencies on protected cultivation	76	50.67
Problems of labour		
Labour not easily available	113	75.33
High labour charges	113	75.33

*Multiple responses

cultivation under protected structure and 17.33 per cent reported that the available varieties were not of good quality. The results are in line with those of Sreedhara et al (2013) and Shende and Meshram (2015).

Problems related to quality infrastructure material

Infrastructure is key factor in any technology. Availability and skill of maintenance of infrastructure

is equally important. 72.00 per cent of the respondents faced difficulty in getting repair of infrastructure from the company installing it and 69.33 per cent had problem of non-availability of local mechanics to repair the damaged structures. The problems related to quality infrastructure material like non-availability of quality material (plastic sheet, iron pipes, foggers, drippers etc), difficulty in getting specific 2 m loop-shaped iron rods and poor quality material available at high cost were highlighted by 78.00, 22.00 and 54.00 per cent respondents. Results are in line with the work of Kumar (2008) and Shende and Meshram (2015).

Problems related to power

Many technologies depend upon electricity to operate. But non-availability of electricity and frquent power-cuts during summer months stop the working operation of technology. Frequent power-cuts in summer as a problem was reported by 18.67 per cent of respondents. Similar observation was made by Singh et al (2015).

Lack of trainings

Training is a key factor in adoption of technology. Among the total respondents about half (50.67%) expressed that only few camps were organized by the government agencies on protected cultivation. Similar results were found by Thyagarajan and Prabu (2005)

Problems of labour

Labour was another problem of the growers engaged in protected cultivation Skilled labour is required for protected cultivation of vegetables to artificially control the temperature conditions. But 75.33 per cent of the respondents revealed that they faced the problem of high labour charges and the same time non-availability of skilled labour was another problem (75.33%). Similar observations were made by Shende and Meshram (2015).

CONCLUSION

High cost of establishment of structures, lack of technical knowhow, lack of skilled labour and non-availability of quality material were the major factors in protected vegetable cultivation in the selected villages. Lack of awareness among consumers about superior quality vegetable produce from protected structures was a cause of marketing constraint. Thus there should be minimum support price for the vegetable crops to motivate the farmers to adopt vegetable cultivation under protected structures. Frequent trainings of the growers were also needed to be conducted to make the growers trained and skilled.

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