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Constraints in adoption of vegetable production technologies by the farmers in district Jalandhar, Punjab

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ABSTRACT

The present study was conducted in the adopted villages of Krishi Vigyan Kendra, Jalandhar, Punjab. Under the study five adopted villages namely Dalla, Kot Badal Khan, Mehsampur, Kandola Kalan and Kaimwala were selected from different blocks. An adequate number of farming families from each village was randomly selected which formed sample size of 125 respondents. In these operational areas yield of vegetable crops was below the potential yield of each crop. Non-adoption of scientific and recommended package of practices of vegetable cultivation lead to wide gap between the yield obtained by vegetable growers than the potential yield. Productivity could be increased by following proper cultivation practices right from sowing to harvesting including use of improved varieties. The data on major constraints like technical, input, financial, marketing and socio-cultural constraints were collected from each respondent through personal interview method with the help of pre-tested structured schedule. It was observed that technical was the most important constraint as it was ranked first. This was followed by input, financial, marketing and socio-cultural constraints which were ranked II, III and IV respectively by the respondents.

Keywords: Constraints; adoption; vegetable cultivation

INTRODUCTION

Importance of vegetables in human diet has been recognized since long but more recently their significance has grown manifold in Punjab because of depletion of underground water resources particularly by water-thirsty crops like paddy. Shrinking landholdings and massive youth unemployment are some other reasons for increased stress on cultivation of vegetable crops. India has vast potential for growing different types of vegetables round the year due to wide diversity in climate and soil throughout country. A wide gap exists between the yield obtained and the potential yield of vegetable crops. It is mainly due to poor knowledge as well as non-adoption of recommended technologies of vegetable cultivation. By adopting improved varieties and recommended technologies production and productivity of vegetables can be increased (Sahu et al 2009).

Hybrids as well as improved varieties lead in promoting the major strategies for increasing productivity. The major constraints in vegetable production are lack of knowledge about improved varieties, seed rate, sowing time and IPM technologies, unavailability of improved seeds of vegetables, non-remunerative price, lack of trainings on scientific vegetable production technology, lack of subsidy and high costs of pesticides. Considering the significance of constraints and their impact the present study was undertaken to know the overall knowledge and adoption of recommended package of practices of vegetable cultivation by the farmers and identify the major bottlenecks/problems faced by them in adoption of vegetable cultivation techniques.

METHODOLOGY

The present study was conducted under the operational area of Krishi Vigyan Kendra, Jalandhar, Punjab. Five villages namely Dalla, Kot Badal Khan, Mehsampur, Kandola Kalan and Kaimwala from Nurmahal and Mehatpur blocks of the district were selected. Sample size was taken according to the

number of farm families in the villages. For this 30 respondents each from Dalla, Mehsampur and Kandola Kalan; 20 from Kot Badal Khan and 15 from Kaimwala were selected. Thus the total number of respondents was 125 out of 813 farm families living in these villages. In the present study constraint was conceptualized as irresistible force that acts as hindrance in adoption of recommended vegetable production technologies. A list of major constraints was prepared in consultation with extension scientists, available literature, field functionaries and progressive vegetable growers. The major constraints were further categorized into suitable sub-heads viz input, technical, financial, marketing and socio-cultural constraints. The primary data were collected from the selected farmers with the help of interview schedule. The constraints as perceived by respondents were scored on the basis of magnitude of the problem as per Meena and Sisodia (2004). The scores of respondents were recorded and converted into mean per cent score and constraints were ranked as per Warde et al (1991).

RESULTS and DISCUSSION

The different kinds of constraints perceived by the farmers in vegetable production are depicted in Table 1.

Technical constraints: The most perceived constraint was lack of knowledge about improved varieties, seed rate and sowing time (95.0%) followed by knowledge of disease resistant varieties (93.67%), seed treatment (88.83%), IPM technologies (85.66%), trainings on scientific vegetable production technology (84.17%), critical stage of irrigation (84.00%), scientific nursery raising at their own farm (78.10%), recommended fertilizer and manure application (76.10%), major pests and diseases identification and their management (75.74%) and availability of literature (74.00 %). These findings are partially supported by the observations of Biswas and Jamir (2015).

Inputs related constraints: The most perceived constraint was non-availability of improved seed at the time of sowing (94.0%) and high cost of pesticides (93.10%). No subsidy on some agricultural inputs (88.00%), scattered and small size landholdings (85.25%), lesser availability of quality FYM (83.00%), shortage of fertilizer in the local market at the time of sowing (82.25%), shortage of labour (76.00%), unavailability of recommended chemicals for seed treatment (74.67%) lack of cold storage (72.54%) and lack of irrigation facilities during hot summer months (70.33%) were some other constraints in descending order of severity. Similar type of results with respect to input constraints in adoption of kitchen gardening were reported by Sharma et al (2011).

Financial constraints: High cost of high yielding varieties (81.34%) was perceived as major constraint followed by high cost of fertilizers and chemicals (79.83%), minimum support price not fixed by the government (77.00%), high cost of improved implements (75.33%) and high cost of irrigation (72.17%). The findings are supported by the work of Meena (2003), Kumawat (2005) and Samantaray et al (2009).

Marketing constraints: Poor marketing facilities resulting in high risk (88.17%) was the major marketing constraint followed by non-remunerative price (85.33%), absence of assured marketing at remunerative price and insurance facility (83.83%), distantly located markets (80.40%), lower price at harvesting time (79.67%), manipulation by merchants (75.83%), lack of transportation facilities and high transportation charges (68.83%), bad condition of roads (65.67), lack of storage facilities (65.17%) and lack of knowledge regarding preservation and processing of surplus produce (64.33%).

Rolle (2006) indicated that fresh produce losses ranged from 10 to 40 per cent globally with losses in India at the high end. Singla and Singh (2016) also reported similar results with respect to marketing constraints.

Socio-cultural constraints: Lack of interest among rural youth was the most serious perceived socio-cultural constraint (74.80%). This could be due to the fact that young generation was lured by the charm of urbanization and was interested to go abroad especially in central Punjab like district Jalandhar. Moreover the parents also preferred their wards to be settled abroad. Other constraints were fear of theft of farm produce (69.30%), continuous use of traditional package of practices (61.70%) and lack of involvement of household labour in vegetable production (59.80%). Similar types of results were also reported by Sethy et al (2010).

Category-wise constraints

In order to find out the relationship between ranks accorded by groups of respondents to

Table 1. Perceived constraints in adoption of improved vegetable production

Constraints	MPS	Rank
Technological constraints		
Lack of knowledge about improved varieties, seed rate and sowing time	95.00	I
Lack of knowledge about disease resistant varieties	93.67	II
Lack of knowledge about seed treatment	88.83	III
Lack of knowledge about IPM technologies	85.66	IV
Lack of trainings on scientific vegetable production technology	84.17	V
Lesser knowledge regarding critical stage of irrigation	84.00	VI
Lack of knowledge about scientific nursery raising at own farm	78.10	VII
Lack of knowledge about recommended fertilizer and manure application	76.10	VIII
Lack of knowledge regarding major pests and diseases identification and their management	75.74	IX
Lack of literature	74.00	X
Overall	83.52	-
Input constraints		
Unavailability of improved seed at the time of sowing	94.00	I
High cost of pesticides	93.10	II
Subsidy not on different agricultural inputs	88.00	III
Scattered and small size landholdings	85.25	IV
Lesser availability of quality FYM	83.00	V
Shortage of fertilizers in the local market at the time of sowing	82.50	VI
Shortage of labour	76.00	VII
Unavailability of recommended chemicals for seed treatment	74.67	V III
Lack of cold storage	72.54	IX
Lack of irrigation facilities during summer months	70.33	X
Overall	81.93	-
Financial constraints		
High cost of hybrid/improved variety seeds	81.34	I
High cost of fertilizers and chemicals	79.83	II
Minimum support price not fixed by the government	77.00	III
High cost of improved implements	75.33	IV
High cost of irrigation during summer months with generator	72.17	V
Overall	77.13	-
Marketing constraints		
Poor marketing facilities resulting in high risk	88.17	I
No remunerative price/minimum support price	85.33	II
Absence of assured marketing at remunerative price and insurance facility	83.83	III
Distantly located vegetable markets	80.40	IV
Lower price at harvesting time	79.67	V
Manipulation by merchants	75.83	VI
Lack of transportation facilities and high charges	68.83	VII
Approach roads not in good condition	65.67	VIII
Lack of storage facilities	65.17	IX
Lack of knowledge regarding preservation and processing of surplus produce	64.33	X
Overall	75.72	-
Socio-cultural constraints		
Lack of interest among rural youth	74.80	I
Fear of theft of vegetable produce	69.30	II
Continuous adoption of traditional practices for growing vegetables	61.70	III
Lack of involvement of household labour for vegetable production	59.80	IV
Overall	66.40	-

different categories of constraints rank order correlation was calculated (Table 2). It was found that technical constraints (83.52%) were top ranked followed by input (81.93%), financial (77.13%), marketing (75.72%) and socio-cultural (66.4%) constraints.

Table 2. Rank order correlation of constraints in adoption of vegetable cultivation

Constraints	MPS	Rank
Technological	83.52	I
Input	81.93	II
Financial	77.13	III
Marketing	75.72	IV
Socio-cultural	66.4	V

CONCLUSION

Technological constraints were most serious followed by input, financial, marketing and socio-cultural constraints. The study highlighted the non-availability and lack of knowledge about improved varieties, seed rate and sowing time, high cost of pesticides, lack of technical knowhow right from sowing to harvesting, high cost of cultivation right from cost of planting material to harvesting as the major constraints faced by the vegetable growers. The study also exhibited that inadequate marketing facilities, lack of awareness on improved technologies, poor sources of information and lack of adoption of vegetable cultivation as enterprise had been contributing to low production. Thus there was a need to organize awareness and training programmes to encourage the farmers for vegetable postharvest management practices. Moreover it would improve nutritional status of farmers and their families thus indirectly lifting their socio-economic status.

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