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Adoption gap in vegetable production practices

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Abstract

The study on Adoption gap in vegetable production practices was conducted in Nagpur district of Vidarbha region of Maharashtra state by employing exploratory design of social research was used with 120 respondent farmers were selected randomly from two tahsils namely Nagpur and Mauda in Nagpur district. The finding revealed that overall adoption gap in vegetable production practices were observed in case of use of recommended doses of FYM (49.17%), sowing time not followed during summer season (50.84%), seed rate (71.66%), use of varieties (79.16%), plant protection measures insects/pests (51.67%) and diseases management (54.16%), respectively. The nearly half of vegetable growers (49.16%) had medium level adoption gap in use of recommended vegetable production practices. The characteristics risk preferences had not any effect on adoption of recommended vegetable production practices.

Keywords: Vegetable growers, adoption gap

Introduction

India is an agricultural country the production per unit area of various crops grown in India is very less as compared to developed countries. Due to low agricultural productivity it becomes very difficult to feed this tremendously increasing population. Now, India has become self sufficient in food grains production. But our standard dietary requirements are still not fulfilled. At present the diet of an average Indian is ill balanced. Thus, to improve our diet, we should necessarily increase the vegetable production. As population of our country is increasing day by day, the peoples are aware about their health and their demands about consumption of vegetables as per dieticians recommendations are also increasing day by day, it leads to more quality and quantity requirements of vegetables. The different research organization were developed different vegetable production technologies but there was not increase in overall production of vegetables up to the recommended level. By considering these aspects the present study entitled Adoption gap in vegetable production practices has been taken for study purpose with specific objectives to study and with their adoption gap in vegetable production practices.

Methodology

The present study was carried out in Nagpur district of Vidarbha region of Maharashtra state with exploratory design of social research was used. The samples of 120 respondent farmers were randomly selected from two talukas namely; Nagpur and Mauda tahsils of Nagpur district. For the present study mostly by considering the higher area under brinjal and tomato crop, five villages from each taluka were selected. From each of the selected village, 6 brinjal and 6 tomato growers were randomly selected thus, from 10 villages, 60 brinjal and 60 tomato growers was selected and constitute a total sample of 120 respondents. The data for study were collected by personal interview of the respondents with the help of pre-tested structured interview schedule. Collected data were analysed tabulated and the statically tools i.e mean, standard deviation and coefficient of correlation.

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Results and Discussion

Adoption gap

Table 1: Distribution of respondents according to adoption gap in overall vegetable production practices

Sr. No.	Recommended practices	Adoption gap (N=120)		
		Brinjal (n=60) Freq. (%)	Tomato (n=60) Freq. (%)	Overall (n=120) Freq. (%)
A.	Preparatory tillage			
1.	Selection of soil	08 (13.33)	10 (16.66)	18 (15.00)
2.	Ploughing and harrowing	05 (08.33)	07 (11.67)	12 (10.00)
3.	FYM	27 (45.00)	32 (53.33)	59 (49.17)
B.	Sowing time			
1.	Kharif	24 (40.00)	27 (45.00)	51 (42.50)
2.	Rabi	28 (46.66)	30 (50.00)	58 (48.34)
3.	Summer	31 (51.66)	30 (50.00)	61 (50.84)
C.	Sowing Method			
1.	Transplanted after 6-8 weeks	04 (06.66)	06 (10.00)	10 (16.67)
D.	Seed rate	41 (68.33)	45 (75.00)	86 (71.66)
E.	Varieties	46 (76.67)	49 (81.67)	95 (79.16)
F.	Seed treatment	12 (20.00)	33 (55.00)	45 (37.50)
G.	Spacing	25 (41.67)	23 (38.33)	48 (40.00)
H.	Intercultural	23 (38.33)	20 (33.33)	43 (35.84)
I.	Irrigation interval	20 (33.33)	26 (43.33)	46 (38.33)
J.	Method of irrigation	15 (25.00)	34 (56.66)	49 (40.83)
K.	Fertilizers	22 (36.66)	30 (50.00)	52 (43.33)
L.	Plant protection measures			
1.	Insects / pests	33 (55.00)	29 (48.33)	62 (51.67)
2.	Disease	31 (51.67)	34 (56.67)	65 (54.16)
M.	Harvesting	08 (13.33)	11 (18.33)	19 (15.83)
N.	Yield	15 (25.00)	17 (28.33)	32 (26.67)

Figures in parentheses indicates percentage

From the above Table 1, it was observed that with respect to preparatory tillage per cent of brinjal (13.33%), tomato (16.66%) and overall vegetable growers (15.00%) had adoption gap in selection of medium to heavy fertile and well drain soil for vegetable production. The less per cent of respondents had adoption gap in tillage practice ploughing and 2-3 harrowing before sowing to brinjal (08.33%), tomato (11.67%) and overall vegetables growers (10.00%). In case of use of recommended FYM 45.00, 53.33 and 49.17 per cent respondents were not using well decomposed FYM @30 to 40 cart load per hectare at the time of sowing to brinjal, tomato and overall vegetable growers, respectively. There was less adoption gap in preparatory tillage of vegetable production.

Adoption gap was observed in use of recommended FYM to vegetable crops. The respondent reported that non availability of FYM, they were not using recommended doses of FYM for vegetable crop.

In case of sowing time it was observed that, over two fifth of brinjal (40.00%), tomato (45.00%) and overall vegetable growers (42.50%) were having adoption gap in kharif vegetable sowing. Whereas, brinjal (46.66%), tomato (50.00%) and overall vegetable (48.34%) growers had adoption gap in rabi sowing, and 51.66, 50.00 and 50.84 per cent brinjal, tomato and overall vegetable growers, respectively had adoption gap in summer sowing. This might be due to climatic conditions and timely availability of seeds. With regard to sowing method (nursery), the very less per cent of respondent brinjal (06.66%), tomato (10.00%) and overall vegetable growers (16.67%) observed adoption gap in preparation of seedling on raised bed and it after transplanted 4-6 weeks after sowing. The majority of vegetable grower's brinjal (68.33%), tomato (75.00%) and overall vegetable growers (71.66%) was not adopting recommended seed rate.

The used high seed rate of vegetable seeds and gap was high. The 76.67 per cent brinjal, 81.67 per cent tomato and 79.16 per cent overall vegetable grower's shows adoption gap in use of recommended varieties. As reported by the respondent vegetable growers recommended varieties of vegetable were not available in market so, they were using private vegetable seeds company varieties so this gap was high.

It was revealed that from Table no. 1, Seed treatment the respondent brinjal (20.00%), tomato (55.00%) and overall vegetable growers (37.50%) had adoption gap in use of recommended seed treatment. The 41.67 per cent brinjal, 38.33 per cent tomato and 40.00 per cent overall vegetable growers shows adoption gap in spacing i. e. plant to plant and row to row spacing and over one third of brinjal (38.33%), tomato (33.33%) and overall vegetable growers (35.83%) was not adopted intercultural practices like weeding, hoeing, etc. The percentage of respondent's brinjal (33.33%), tomato (43.33%) and overall vegetable growers (38.33%) were not adopting irrigation at recommended interval and as per need of vegetable crop this gap was due to electric problem, labour problem and irrigation water availability as reported by the vegetable growers. Whereas, 25.00 per cent brinjal, 56.66 per cent tomato and 40.33 per cent overall vegetable growers were not adopting proper method of irrigation (ridges and furrows) to vegetable crops. In case of fertilizer doses, 36.67 per cent brinjal, 50.00 per cent tomato and 43.33 per cent overall vegetable growers were not adopting recommended fertilizer doses to brinjal, tomato and overall vegetables, respectively. The respondents reported this adoption gap due to inadequate and timely non availability of fertilizers and high cost of fertilizers.

In case of plant protection measures, it was observed that majority of the brinjal (55.00%), tomato (48.33%) and overall

vegetable growers (51.67%) were not adopting recommended control measures of insects / pests. The majority of brinjal (51.67%), tomato (56.67%) and overall vegetable growers (54.16%) were not adopting recommended control measures for control of vegetable diseases. The respondents reported that to this gap was due to non-availability of control measures, high cost of control measures and also lack of knowledge about this practices. The less than two fifth of respondent's brinjal (13.33%), tomato (18.33%) and overall vegetable growers (15.33%) shows gap in recommended time

of harvesting. As reported by the respondent these gap was due to timely non-availability of labours, climatic and market factors.

In case yield of vegetables over one fourth of respondent's i. e. brinjal (25.00%), tomato (28.33%) and overall vegetables growers (26.67%) were not received recommended yield from vegetable crops. By and large the adoption gap in vegetable production practices was observed in use of recommended FYM, seed rate, use of varieties, insect pest and diseases management practices of vegetable production.

Table 2: Distribution of respondents according to their overall adoption gap in vegetable production practices

Sr. No	Category	Vegetable growers		
		Brinjal (n=60) Freq. (%)	Tomato (n=60) Freq. (%)	Overall (N=120) Freq. (%)
1.	Low	12 (20.00)	07 (11.66)	19 (15.83)
2.	Medium	29 (48.34)	30 (50.00)	59 (49.16)
3.	High	19 (31.66)	23 (38.34)	42 (35.00)
	Total	60 (100.00)	60 (100.00)	120 (100.00)

Figures in parentheses indicates percentage

From the above Table no.2, it was observed that nearly half of the brinjal (48.34%), tomato (50.00%) and overall vegetable growers (49.16%) had medium level of adoption gap. Whereas, over one third of overall vegetable growers (35.00%) had high adoption gap and 15.83 per cent of vegetable growers observed in low level of adoption gap. It could be concluded from results that the majority of the respondents had medium level of adoption gap. The finding was in consonance with the findings reported by the Barman, *et al.* (2015) [1].

II Relationship between characteristics of respondents with their adoption gap in vegetable production practices

Table 3: Correlation coefficients of characteristics of the respondents with their adoption gap

Sr. No.	Variables	' r ' values
1	Education	-0.4315**
2	Farming experience	-0.2421*
3	Land holding	-0.6099**
4	Annual income	-0.8097**
5	Social participation	-0.3286**
6	Extension contact	-0.3270**
7	Sources of information	-0.4886**
8	Risk orientation	0.1716 ^{NS}
9	Market orientation	-0.4175**
10	Innovativeness	-0.2955**
11	Knowledge	-0.4722**

** - Significant at 0.01 per cent level, * - Significant at 0.05 per cent level, NS – Non-significant

The data presented in Table no.3, reveals that the characteristics of respondents namely, education, land holding, annual income, social participation, extension contact, sources of information, market orientation, innovativeness and knowledge were negatively and significantly correlated at 0.01 per cent level of probability with adoption gap in vegetable production practices. Farming experience was negatively and significantly correlated at 0.05 per cent level of probability with adoption gap in vegetable production practices. The characteristics of respondents namely, risk orientation was non-significantly related with adoption gap in vegetable production practices.

The medium level of education enhance his capacity to

understand the intricacies involved in various vegetable production practices and applying them in the field situation hence a negative and significant relationship was observed between adoption gap in vegetable production practices. A similar finding was also reported by Wattamwar and Deshmukh (2008) [4].

The correlation coefficient between knowledge and adoption gap was found to be negative and significant at 0.01 per cent level of probability. Similar findings were also reported by Bhati (2002) [2]. If the size of land holdings is big, than more number of vegetable production practices were adopted. Hence a negative and significant relationship was observed between adoption gap in vegetable production practices and the variable land holding. Similar results were also reported by Gade (2012) [3]. Extension contact enables farmers to attend a number of training conducted by a number of organizations along with their discussion with vegetable experts, and in training also visit to successful farmers' fields; group discussion, conduct study tour to other states, etc. were also organized. Therefore extension contact had negative and significant relationship with adoption gap in vegetable production practices.

The result therefore stated that, the characteristics of respondents namely, education, land holding, annual income, social participation, extension contact, sources of information, market orientation and innovativeness along with knowledge are the factors that negative influence on adoption gap in vegetable production practices. The data revealed from the above Table 3 that, the independent variables viz., education, farming experience, land holding, annual income, social participation, extension contact, sources of information, market orientation, innovativeness and knowledge were found negatively and significantly correlated with adoption gap in vegetable production practices.

Conclusion

The farmers who are engaged in their farming they should be technological update by regarding new technologies, practices recommended by Agricultural Universities, which are useful to minimize the adoption gap. The adoption gap in vegetable production practices was observed in case of practices adoption of recommended FYM, seed rate, use of varieties, insect pest and disease management practices. There is need

to establish a sound relationship with the farmers and the agricultural universities and motivate the farmers by organization of some motivational programme to farmers. So that communication gap will be filled. There is need to make available inputs like FYM, seed of recommended varieties, insect pest and disease control measures and knowledge about these practices of vegetable cultivation to vegetable growers. So it is necessary start the motivational programme related to agriculture so they can motivate to participate in different agriculture programmes for adopting recommended practices.

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