

Research Article

Adoption of drip irrigation technologies by the orange growers

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SUMMARY : The study was undertaken in the year 2012- 2013. A sample of 120 farmers was randomly selected in 14 villages of Chandur Bazar Panchayat Samiti of Amravati district of Maharashtra. The investigation revealed that 55.83 per cent of respondents of orange growers had medium level of adoption of drip irrigation technologies while, 33.33 per cent of respondents of orange growers had high level of adoption and 10.83 per cent of respondent possessed low level of adoption of drip irrigation technologies. The correlation analysis related to independent variable *viz.*, education, land holding, annual income, cosmopolitanism, innovativeness, extension contact, knowledge, irrigation source, risk preference and cropping pattern showed significant and positive relationship with adoption of drip irrigation technologies. While only age showed negative and non significant relationship between adoption of drip irrigation technologies.

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KEY WORDS :

Adoption,
Drip irrigation
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BACKGROUND AND OBJECTIVES

The citrus is the most refreshing and health promoting juicy fruits as such deserves prominent place in our diet. They are rich source of vitamin 'C' and also supply other vitamins, fruit sugars, fruit acids, minerals and alkaline salts which are needed, therefore, get importance in daily diet. They are commonly grown as tropical and sub- tropical fruit.

Drip irrigation is defined as application of small and preciously predetermined amount of water near the rootzone of the plant at frequent intervals through emitting devices via a network of filtration unit, *i.e.*, PVC/HDPE (Polyvenyl chloride/high density polythethelen) through mains, submains and laterals. Experiments on number of crops have shown that, in all cases, the yield under drip irrigation technology exceeded substantially. Irrigation efficiency in drip irrigation technology is adjusted to more than 90 per cent as compared to about 65 to 70 per cent in case of sprinkler and about 50 to 60

per cent in case of surface methods of irrigation. This itself indicates the quantum of saving water, which is valuable under the extreme water shortage conditions with no wastage through evaporation, percolation, leaching or runoff.

Objectives :

- To study the profile of orange growers using drip irrigation technology.
- To study the adoption level by the orange growers about the drip irrigation technology.
- To find out the relationship between selected characteristics with adoption of drip irrigation technology.
- To identify the constraints and invite suggestion from the respondents.

RESOURCES AND METHODS

Amravati block was purposively selected for the study. The study was conducted in Chandur Bazar tahsil of Amravati district. Farmers in 14 villages were contacted at their places of

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residence and data were collected by personal interview. From 14 villages 120 respondents were selected by lottery method. The interview schedule was constructed by formulating relevant questions in accordance with objectives of the study. The schedule included questions pertaining to age, education, land holding, annual income, cosmopolitness, innovativeness, extension contact, knowledge, irrigation source, risk preference, and cropping pattern as well as adoption of drip irrigation technologies and constraints faced by them while adopting drip irrigation technologies in orange orchard.

The information from the respondent was collected by personal interview methods and their responses were considered for the purpose of present study. Data were collected related to the adoption of drip irrigation technologies by orange growers and constraints faced by farmers while adopting drip irrigation technologies in orange orchard. For analysis of data mean, S. D., correlation and t-test were used as statistical tools.

OBSERVATIONS AND ANALYSIS

The findings of the study as well as relevant discussion have been summarized under the following heads:

Distribution of profile of respondents :

Table 1 depicts clearly that the age profile of respondents showed that majority of (38.33%) respondents were from middle age group. The education profile of respondents showed that, majority of (35.83%) respondents having middle class education. The land holding profile of respondents observed that majority of (30.83%) the farmers had semi-medium size of land holding. The annual income profile of respondents showed that majority of (35.00%) of respondents had high annual income. The cosmopolitness profile of respondent's showed that majority of respondent (48.33%) had medium level of cosmopolitness. The innovativeness profile of respondent's showed that majority of respondents (41.66%) had medium level of innovativeness. The extension contact profile of respondents showed that majority of respondents (69.16%) had high extension contact. The knowledge profile of respondents showed that majority of respondent (69.16%) had high knowledge. The irrigation source profile of respondents showed that majority of respondents (44.16%) had well, as source of irrigation. The risk preference profile of respondents showed that majority of respondent (65.83%) had medium risk preference. The cropping pattern profile of respondents showed that majority of respondent (47.50%) had medium level of cropping pattern.

Adoption level of drip irrigation technologies :

It is observed from findings presented in Table 2 that,

Table 1 : Showing personal, socio-economic and psychological profile of respondents (n=120)

Sr. No.	Profile	Number	Percentage
1.	Age		
	Young (upto 35 year)	39	32.50
	Middle (36 to 50 year)	46	38.33
	Old (51 and above)	35	29.16
2.	Education		
	Functional illiterate (can read and write)	7	5.83
	Primary education (upto 4 th std)	5	4.16
	Middle class education (5 th and 7 th std)	43	35.83
	High school (8 th and 10 th std)	24	20.00
	College and above (11 th and above)	41	34.14
3.	Land holding		
	Marginal (0.01 to 1 ha)	15	12.50
	Small (1.01 to 2.0 ha)	31	25.83
	Semi medium (2.01 to 4.0 ha)	37	30.83
	Medium (4.01 to 10.0)	22	18.33
	Large (10.01 and above)	15	12.50
4.	Annual income		
	Upto 20,000/-	4	3.33
	20,001/- to 50,000/-	22	18.33
	50,001/- to 1,00,000/-	26	21.66
	1,00,001/- to 1,50,000/-	4	3.33
	1,50,001 /- to 2,00,000/-	22	18.33
	2,00,001/- and above	42	35.00
5.	Cosmopolitness		
	Low (5 to 6)	16	13.33
	Medium (7 to 8)	58	48.33
	High (9 to 10)	46	38.33
6.	Innovativeness		
	Low (20 to 25)	24	20
	Medium (26 to 31)	50	41.66
	High (32 to 37)	46	38.33
7.	Extension contact		
	Low (7 to 13)	7	5.83
	Medium (14 to 20)	30	25.00
	High (21 to 27)	83	69.16
8.	Knowledge		
	Low (8 to 10)	8	6.66
	Medium (11 to 13)	29	24.16
	High (14 to 16)	83	69.16
9.	Irrigation source		
	Well	53	44.16
	Tube well	15	12.50
	Both (well and tube well)	52	43.44
10.	Risk preference		
	Low (14 to 18)	7	5.83
	Medium (19 to 23)	79	65.83
	High (24 to 28)	34	28.33
11.	Cropping pattern		
	Low (0)	20	16.66
	Medium (1)	57	47.50
	High (2)	43	35.83

55.83 per cent of farmer had medium, 33.33 per cent of orange growers had high level about adoption of drip irrigation technologies, and 10.83 per cent of orange growers had low level about adoption of drip irrigation technologies. It is evident from the findings that majority of orange growers had medium level about adoption of drip irrigation technologies.

Table 2: Distribution of respondent's according to adoption level (n=120)

Sr. No.	Level	Number of respondents	Percentage
1.	Low (upto 74))	13	10.83
2.	Medium (75 to 88)	67	55.83
3.	High (88 and above)	40	33.33

Relational analysis :

In order to find out the relationship of the selected characteristics of the respondents with their adoption, correlation co-efficient was worked out. The correlation co-efficient of adoption with profile characteristics of respondents has been furnished in Table 3.

Table 3 : Co-efficient of correlation of selected characteristics of respondents with their adoption level of drip irrigation technology

Sr. No.	Variables	Adoption	
		'r'	't'
1.	Age	-0.1534	1.68 N.S.
2.	Education	0.2046	2.2715*
3.	Land holding	0.3740	4.3807*
4.	Annual Income	0.3711	4.3418*
5.	Cosmopolitness	0.2941	3.3434*
6.	Innovativeness	0.3934	4.6478*
7.	Extension contact	0.3141	3.5947*
8.	Knowledge	0.4289	5.1579*
9.	Irrigation source	0.3057	3.4885*
10.	Risk preference	0.4666	5.7309*
11.	Cropping pattern	0.4285	5.1516*

NS=Non-significate, * indicate significance of value at P=0.05

It can be seen from Table 3 that profile of orange growers namely education, land holding, annual income, cosmopolitness, innovativeness, extension contact, knowledge, irrigation source, risk preference, cropping pattern were found to be positive and significantly correlated with adoption of drip irrigation technology. Only age showed negative and non-significant relationship with adoption of drip irrigation technology. These findings are supported by the findings made by Barse (2010), Bhosale (2003) and Patil (2001).

The table also showed that the adoption level of respondent (orange growers) depends on education, land holding, annual income, cosmopolitness, innovativeness, extension contact, knowledge, irrigation source, risk preference and cropping pattern.

Conclusion :

These findings revealed that, 55.83 per cent of farmers had medium level about adoption of drip irrigation technologies. Out of eleven selected characteristics, only one characteristic namely age had non-significant relation with level of adoption of drip irrigation technologies. The study also indicated that education, land holding, annual income, cosmopolitness, innovativeness, extension contact, knowledge, irrigation source, risk preference, cropping pattern had positive and significant relationship with level of adoption of drip irrigation technologies.

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