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RESEARCH ARTICLE :

Attitude of farmers towards drip irrigation system

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SUMMARY : This study was conducted in Chittorgarh and Udaipur district of Rajasthan. The majority of respondents has expressed favourable attitude towards drip irrigation system. It was noticed that farmers had higher of agreement with statement *i.e*. the best method for water scarcity conditions and least level of agreement with statement *i.e.* DIS does not require construction of irrigation channels and check basin.

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KEY WORDS :
Attitude, Farmers, Drip irrigation system

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BACKGROUND AND OBJECTIVES

Water is the most precious natural resource; it is essential for agricultural development and all organic life on the earth. Intensive agriculture and an ever-growing human population are fast depleting this already scarce resource. This is a challenging situation and need of the hour is to conserve 'water' and ensure its 'efficient use'. Rajasthan is the first largest state in India with a total geographical area of 34.20 m ha. which accounts 10.42 per cent of country. It has only 1.18 per cent country's water resource. It is an extremely water scarce state. Due to arid and semi-arid climatic condition leading to a negative moisture index, poor soil quality and traditional agriculture practices. The food security, nutritional security and sustainability of horticulture production system are still of a distant dream in the state. Wells and tube wells are the major sources of water in the state. The irrigation scenario of Rajasthan is characterized by erratic and with scanty rainfall, dwindling ground water resources and increasing alternative demand of municipal and industrial sector. As a result, less water is available for agriculture. Drip irrigation system can solve the problem scarcity in the state. Slow and steadily, drip irrigation is getting momentum in terms of adoption by the farmers. Keeping these facts in view, the present investigation was undertaken with an objective to study the attitude of farmers towards drip irrigation system.

RESOURCES AND METHODS

The study was conducted in purposively selected districts of Chittorgarh and Udaipur in southern Rajasthan. One hundred twenty farmers from eight Panchayat samities of two districts were selected on the basis of proportionate random sampling technique. The data were collected by the researchers themselves with the help of well constructed

interview schedule by face- to- face interview technique. Thereafter, collected data were analyzed, tabulated and interpreted in the light of above objective.

OBSERVATIONS AND ANALYSIS

To get an overview of the farmers regarding their attitude towards drip irrigation system, they were classified into three categories *i.e.*, least favourable, favourable and most favourable on the basis of calculated mean and standard deviation of the attitude score obtained by them.

Data given in Table 1 reveal that nearly three-fourth of the farmers 75 (62.50 %) had favourable attitude towards drip irrigation system followed by 23 (19.17 %) who expressed most favourable attitude. However, only 22 (18.33 %) farmers expressed least favourable attitude towards drip irrigation system.

Further, analysis of Table 1 shows that 39 (65.00 %) Chittorgarh's and 36 (60.00 %) Udaipur's farmers had favorable attitude towards drip irrigation system. Besides, 13 (21.67 %) Chittorgarh's and 10 (16.67 %) Udaipur's farmers possessed most favourable attitude towards drip irrigation system.

Further noted that, 8 (13.33 %) Chittorgarh's and 14 (23.33 %) Udaipur's farmers showed least favourable attitude towards drip irrigation system. The least favourable attitude of farmers might be due to higher initial investment cost of drip irrigation system, Hence, it may be inferred that majority of the farmers had positive attitude towards drip irrigation system. The findings of the present study are in agreement with the findings of Khajuria *et al.* (2001), who revealed that majority of the respondents (64.58 %) had favourable attitude towards sprinkler irrigation technology. It was followed by one-fifth of them (20.84 %) having most favourable, and only 14.58 per cent had least favourable attitude towards this technology.

For in depth view, aspectwise attitude of farmers towards drip irrigation system was also worked out. For this, per cent level of agreement was calculated for every aspect, and it was measured on five point continuum scale and has been presented in Table 2. It is obvious that most important statements of highest degree of agreement were "the best method for water scarcity conditions", "initial investment for installment of DIS is very less and bearable by the farmers", "land leveling is not essential if DIS system is used", "DIS is beneficial for farmers" and "through DIS there is increase in yield upto 230 per cent" with their per cent score 93.66, 89.83, 89.00, 88.50 and 86.83, respectively. The reason may be that farmers possessed complete knowledge about the maximum utilization of irrigation water.

The statements which had high degree of attitude were "through DIS maximum utilization of available water is possible", "during high wind velocity even distribution of water is possible", "by using drip irrigation system, about 70 per cent of extra area can be irrigated", "drip irrigation saves the crop from frost", "water management is not hard through DIS", "this system of irrigation is suitable for small and marginal farmers with respect to unit cost of establishment" and "credit and subsidy facilities are adequate for DIS" with their respective scores 85.00, 84.00, 81.33, 81.33, 81.17, 77.17 and 76.17 (Rathor and Kalla, 2002).

The table further indicates moderate attitude towards the statements like "labour cost is less when crop is irrigated by DIS", "much technical knowledge not required for operating DIS" and "physical condition and structure of soil are not disturbed by continuous use of this system of irrigation", had scoring of 76.00, 64.67 and 62.67, respectively. The farmers expressed good level of attitude toward the statements *viz.*, "In DIS, at high temperature, less water losses are there through evaporation" and "DIS does not require more manpower" having per cent score 59.50 and 47.17, respectively. The farmers expressed slightly favourable attitude towards

Table 1 : Classification of farmers according to their level of attitude towards drip irrigation system **(n= 120)**

Sr. No.	Level of attitude	District				Total	
		Chittorgarh		Udaipur			
		f	%	f	%	f	%
1.	Least favourable (<58.44)	8	13.33	14	23.33	22	18.33
2.	Favourable (58.44-66.96)	39	65.00	36	60.00	75	62.50
3.	Most favourable (>66.96)	13	21.67	10	16.67	23	19.17
	Total	60	100	60	100	120	100

f = Frequency, % = Per cent, Mean = 62.70 & S. D. = 4.26

statements, "DIS decreases the cost of cultivation of crops", "handling of drip sets is very easy technique" and "spare parts of DIS are easily available in the market" scored as score 74.33, 46.00 and 42.17, respectively. This might be due to low initial investments and low rate of spare parts of drip irrigation in the study area.

Comparison of attitude between respondents of selected districts:

H_0 : There is no significant difference in attitude of two different groups of respondents towards drip irrigation system.

H_1 : There is significant difference in attitude of two different groups of respondents towards drip irrigation system.

To find out the significance of difference in attitude of two different categories towards drip irrigation system, 'Z' test was applied. The examination of Table 3 that there has been significant difference between Chittorgarh's and Udaipur's farmers with regard to attitude level about drip irrigation system as overall 'Z' value was 13.47, at 1 per cent level of significance. Thus, the hypothesis formulated in Null form was rejected and alternative hypothesis was accepted. It could be concluded that there was significant difference between two categories. It means that Chittorgarh's farmers had high attitude level comparatively than Udaipur's farmers towards drip irrigation system in the study area. Similar

Table 2 : Statement wise attitude of farmers towards drip irrigation system **(n= 120)**

Sr. No.	Statement	Number of respondents					% level of agreement
		SA	A	UD	DA	SDA	
1.	By using drip irrigation system about 70 per cent extra area can be irrigated	21	86	13	0	0	81.33
2.	In DIS at high temperature less water losses are there through evaporation	18	41	13	16	32	59.50
3.	Through DIS maximum utilization of available water is possible	37	76	7	0	0	85.00
4.	During high wind velocity even distribution of water is possible	44	64	8	3	1	84.00
5.	Drip irrigation saves the crop from frost	19	90	11	0	0	81.33
6.	Much technical knowledge is not required for operating DIS	18	51	13	17	21	64.67
7.	Labour cost is less when crop is irrigated by DIS	13	85	7	15	0	76.00
8.	Spare parts of DIS are easily available in market	3	5	2	102	8	42.17
9.	Initial investment for installment of DIS is very less and bearable by farmers	54	62	7	0	0	89.83
10.	DIS decreases the infiltration rates	1	8	15	72	24	41.00
11.	This system of irrigation is suitable for small and marginal farmers with respect to unit cost of establishment	23	72	10	15	0	77.17
12.	DIS does not require construction of irrigation channels and check basin	0	0	0	96	24	36.00
13	Land leveling is not essential if DIS system used	72	30	18	0	0	89.00
14.	Physical condition and structure of soil are not disturbed by continuous use of this system of irrigation	12	48	24	26	10	62.67
15.	Through DIS there is increase in yield upto 230 per cent	82	13	12	8	5	86.83
16.	DIS decreases the cost of cultivation of crop	3	17	7	87	6	74.33
17.	DIS is beneficial for farmers	54	63	3	0	0	88.50
18.	DIS does not require more manpower	10	4	13	85	8	47.17
19.	The best method for water scarcity conditions	90	22	8	0	0	93.66
20	Water management is not hard through DIS	41	58	11	7	3	81.17
21.	Credit and subsidy facilities are adequate for DIS	36	48	17	15	4	76.17
22.	Handling of drip sets is very easy technique	6	8	12	84	10	46.00

Table 3 : Comparison of attitude between respondents of selected districts **(n= 120)**

Sr. No.	Districts	Mean	S.D.	'Z' Value
1.	Chittorgarh	65.80	2.90	13.47**
2.	Udaipur	59.60	2.15	

** indicates significant of value at P=0.01

work related to the present investigation was also carried out by Brar (2008); Meena (2006) and Saini (2008).

Conclusion :

Based on the findings, it could be concluded that majority of farmers (62.50 %) had favorable attitude towards drip irrigation system. This might be due to the fact that the farmers were realizing the importance of water, and limiting neutral resources. The least favorable attitude of farmers might be due to higher initial investments of drip irrigation system. Hence, it may be inferred that majority of farmers had positive attitude towards drip irrigation system. It is recommended that drip irrigation system be introduced among the other areas of state and elsewhere. Further, it was concluded that farmers had higher degree of agreement with the statements like the "best method for water scarcity conditions" and least level of agreement with the statement *i.e* "DIS does not require construction of irrigation channels and check basin. Hence, more number of training programmes and demonstrations must be conducted by the respective ARS, KVKs and other extension functionaries.

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