Raj. J. Extn. Edu. 20 : 117-120, 2012

KNOWLEDGE LEVEL OF BENEFICIARY FARMERS ABOUT DRIP IRRIGATION TECHNOLOGY

H.S. Bunker*, L.R. Choudhary and Hanuman Lal*****

ABSTRACT

Present study was conducted in Jaipur district of Rajasthan. Jaipur district was selected purposely for the present study. The Jaipur district consists thirteen tehsils, out of which Chomu and Phulera tehsils were selected randomly. Three gram panchayats was selected randomly from Chomu tehsil and two gram panchayats were selected from Phulera tehsil randomly. Two villages were selected from each selected gram panchayat of Chomu and Phulera tehsil having maximum number of drip irrigation sets. Thus, in all ten villages were selected purposively. In all 80 beneficiary farmers were selected on the basis of proportionately sampling technique. It was found that 23.75 per cent, 60.00 per cent and 16.25 per cent beneficiary farmers were in low, medium and high knowledge level, respectively regarding drip irrigation technology. The beneficiary farmers possesses highest knowledge level of of the fact that drip irrigation technology save the water as compared to other method of irrigation' whereas they had least knowledge about the type of drippers widely used for fruit crops in drip irrigation technology.

INTRODUCTION

Drip irrigation technilogy is relatively a new concept, which has developed over the last decade throughout the world. In 1964, Symcha Blass, an Israeli engineer developed the first potential drip irrigation technology. Today, India ranks 7th in terms of coverage of area under drip irrigation with an irrigated area of 3,09,466.4 hectares after USA, Spain, Australia, South Africa, Israel and Italy. In this method, water is supplied directly near the root zone of plants, through drop by drop, with the help of drippers. Drippers are linked with side pipelets which are linked with main pipeline connected with water supplying source (*Yojana July, 2010*).

Drip irrigation technology is very profitable as it saves 60-70% water as compared to surface irrigation method and reduces labour cost, protects the plants from diseases by minimizing humidity in atmosphere. Soluble fertilizers can also be applied with drip irrigation water. Thus, drip irrigation has become a means of hi-tech agriculture / Horticulture and precision farming. This technology is, especially, suitable for saline and alkaline soil and water use efficiency (*Yojana July, 2010*).

The drip irrigation technology is especially suitable for saline and alkaline soil and water use efficiency under Drip Irrigation Technology is 80 to 90 per cent. Bahuguna (1996) stated that by drip system of irrigation, 95 per cent of the irrigation water can be used efficiently. By this method 30 to 50 per cent production may be increased (*Yojana July, 2010*).

The technology has the potential to really double the area under irrigation through judicious use of water with efficiency as high as 80-90% as compared to 30-35% in case of surface irrigation. The technique is very commonly used in Israel. The conditions like agro-climatic, soil and availability of irrigation water are almost similar in Israel and the state of Rajasthan. Hence, it was recommended by the scientists that the said drip irrigation technology might also be applicable and useful in India (*Yojana July, 2010*).

RESEARCH METHODOLOGY

The present paper presents the data gathered in a proportionately selected sample of the beneficiary farmers towards drip irrigation technology in Chomu and Phulera tehsils of Jaipur district of Rajasthan. The 80 beneficiary farmers

* M.Sc. Scholar, Department of Extension Education, SKN College of Agriculture, Jobner, Jaipur.

** M.Sc. Scholar, Department of Extension Education, SKN College of Agriculture, Jobner, Jaipur.

*** Associate Professor & Head, Department of Extension Education, SKN College of Agriculture, Jobner, Jaipur.

were selected for the study.

The final knowledge score had 31 items relating to drip irrigation technology. Equal weightage was given to each item. For correct answer '1' score was awarded and '0' for wrong answers. Thus, knowledge score was ready for administering to the actual beneficiary farmers. The knowledge score was calculated on the basis of following formula.

$$MPS = \frac{\text{Total score obtainable by the beneficiary farmers}}{\text{Maximum obtainable score}} \times 100$$

Where,

MSP = Mean per cent score

The possible maximum score one could obtain was 31. The mean and standard deviation of all the beneficiary farmers were computed for classifying the knowledge level in different categories. Based on the mean score and standard deviation, three category of knowledge of drip set owners were categorized under low, medium and high knowledge category.

RESULTS AND DISCUSSION

The statistical data regarding the knowledge level of beneficiary farmers are presented in the Table 1

Table 1. Knowledge level of beneficiary farmers about drip irrigation technology

n= 80

S. No.	Knowledge level	Frequency	Percentage
1	Low (score below 17.50)	19	23.75
2	Medium (score from 17.51 to 22.04)	48	60.00
3	High (score above 22.04)	13	16.25
	Total	**80**	**100.00**

$\bar{X}$ = 19.77, s = 2.27

Table 1 revealed that 23.75 per cent, 60.00 per cent and 16.25 per cent beneficiary farmers fell under the categories of low, medium and high knowledge level, respectively with respect to the drip irrigation technology. It may be concluded from the above narration that majority of the beneficiary farmers were having medium knowledge level regarding drip irrigation technology.

Further, the extent of knowledge about different aspect of drip irrigation technology were also analyzed separately. The relative importance of all the thirty one statement of drip irrigation technology were highlighted by ranking them in descending order on the basis of mean per cent score of knowledge level. The data have been presented in Table 2.

The table 2 revealed that beneficiary farmers had extremely high knowledge i.e. up to the extent of 92.50 MPS about "Do you know about the drip irrigation technology save the water as compared to other method of irrigation" and this aspect was ranked first. The second ranked (87.50 MPS) with regard to knowledge of the beneficiary farmers about "Is the installation (adoption/use) cost higher by using drip irrigation technology as compared to other method of irrigation" followed by "Do you know about installation (adoption/use) cost of drip irrigation technology" (86.25 MPS), "Do you agree that an additional area can be irrigated by drip irrigation technology" (85.00 MPS), "Is drip irrigation technology helpful in the protecting the crops from diseases" (82.50 MPS), similarly, "Whether drip irrigation technology is suitable for fruit plants", (81.25 MPS), "Do you know about the components of drip irrigation technology" (81.25 MPS) and "Do you know about important tips, which are essential to be kept in mind, for proper maintenance of drip irrigation technology" (80.00 MPS), which were ranked third, fourth, fifth, sixth and seventh, respectively.

The aspects like "Which component of drip irrigation technology is used for fertigation" (78.75 MPS), "Do you know about the instrument, used to measure the pressure of water in drip irrigation technology" (77.50 MPS) and "Do you know about advantages of drip irrigation technology" (75.00 MPS), "Can the liquid fertilizer, insecticides, fungicide and herbicide be applied through drip irrigation technology" (70.00 MPS) and "Do you know about agency providing subsidies and loan for purchasing drip irrigation set" (68.75 MPS), which also known by the beneficiary farmers and obtained VIII, IX, X, XI and XII rank, respectively.

Table 2. Measurement the knowledge level of beneficiary farmers about drip irrigation technology n = 80

S. No	Knowledge aspects	M.P.S.*	Rank
1	Do you know about the drip irrigation technology save the water as compared to other method of irrigation.	92.50	I
2	Is the installation (adoption/use) cost higher by using drip irrigation technology as compared to other method of irrigation ?	87.50	II
3	Do you know about installation (adoption/use) cost of drip irrigation technology ?	86.25	III
4	Do you agree that an additional area can be irrigated by drip irrigation technology?	85.00	IV
5	Is drip irrigation technology helpful in the protecting the crops from diseases?	82.50	V
6	Whether drip irrigation technology is suitable for fruit plants ?	81.25	VI
7	Do you know about the components of drip irrigation technology ?	81.25	VI
8	Do you know about important tips, which are essential to be kept in mind, for proper maintenance of drip irrigation technology ?	80.00	VII
9	Which component of drip irrigation technology is used for fertigation ?	78.75	VIII
10	Do you know about the instrument, used to measure the pressure of water in drip irrigation technology ?	77.50	IX
11	Do you know about advantages of drip irrigation technology ?	75.00	X
12	Can the liquid fertilizer, insecticides, fungicide and herbicide be applied through drip irrigation technology ?	70.00	XI
13	Do you know about agency providing subsidies and loan for purchasing drip irrigation set ?	68.75	XII
14	Whether drip irrigation technology is useful for hilly and undulated area.	67.50	XIII
15	Do you know about the practical irrigation efficiency possible by using this technology of irrigation ?	66.25	XIV
16	Can drip irrigation technology be used where irrigation water is very scarce?	65.00	XV
17	Is equal distribution of water possible on high wind velocity in drip technology of irrigation ? .	63.75	XVI
18	Can we measure the amount of water easily with drip irrigation technology as compared to other methods?	61.25	XVII
19	Do you know the number of emitter used for per plant ?	60.00	XVIII
20	Do you know about the soil, which is most suitable for drip irrigation technology?	58.75	XIX
21	Do you know about the major problems in drip irrigation technology ?	56.25	XX
22	Do you know that surface run-off can be eliminated by using drip irrigation technology ?	53.75	XXI
23	Do you know that drip irrigation technology help in maintaining physical conditions and structure of soil ?	48.75	XXII
24	Do you know about the types of filters used in drip irrigation technology ?	48.75	XXII
25	Does drip irrigation technology control weeds in crop ?	46.25	XXIII
26	Do you know about the types of drip irrigation technology?	43.75	XXIV
27	Do you know about the sub-surface type of drip irrigation technology is useful for ?	42.50	XXV
28	Do you know about the surface type drip irrigation technology is useful for ?	41.25	XXVI
29	Do you know about saline water can be used in drip irrigation technology ?	37.50	XXVII
30	Do you know about chemicals, which are used for cleaning the drip technology ?	36.25	XXVIII
31	Do you know about type of drippers are widely used for fruit crops in drip irrigation technology?	25.00	XXIXI

* Mean percent score

On the other hand, the beneficiary farmers had moderate knowledge level about the aspects like "Whether drip irrigation technology is useful for hilly and undulated area", "Do you know about the practical irrigation efficiency possible by using this technology of irrigation", "Can drip irrigation technology be used where irrigation water is very scarce", "Is equal distribution of water possible on high wind velocity in drip technology of irrigation", "Can we measure the amount of water easily with

drip irrigation technology as compared to other methods", "Do you know the number of emitter used for per plant", "Do you know about the soil, which is most suitable for drip irrigation technology", "Do you know about the major problems in drip irrigation technology", "Do you know that surface run-off can be eliminated by using drip irrigation technology" and similarly, "Do you know that drip irrigation technology help in maintaining physical conditions and structure of soil", "Do you know about the types of filters used in drip irrigation technology" with MPS of 67.50, 66.25, 65.00, 63.75, 61.25, 60.00, 58.75, 56.25, 53.75 and 48.75 and were ranked XIII, XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI and XXII, respectively.

Further, the beneficiary farmers had little knowledge towards five aspects like "Does drip irrigation technology control weeds in crop", "Do you know about the types of drip irrigation technology", "Do you know about the sub-surface type of drip irrigation technology is useful for", "Do you know about the surface type drip irrigation technology is useful for" and "Do you know about saline water can be used in drip irrigation technology" with MPS 46.25, 43.75, 42.50, 41.25 and 37.50 and XXIII, XXIV, XXV, XXVI and XXVII, rank respectively.

The beneficiary farmers had very little knowledge about the aspects like "Do you know about chemicals, which are used for cleaning the drip technology" and "Do you know about type of drippers are widely used for fruit crops in drip irrigation technology" with MPS of 36.25 and 25.00 second and last ranks, respectively.

CONCLUSION

It could be concluded that majority of beneficiary farmers had medium knowledge level of drip irrigation technology whereas, 23.75 per cent and 16.25 per cent low and high knowledge level, respectively.

REFERENCES

Agricultural Research Data Book. 2009. ICAR, Krishi Bhawan, New Delhi-110114, p. 149.

Bahuguna, S.L. 1996. Jal ki barbadi rokna jaruri. Krishi Chayanika, 17 (1) : 27-32.

Yojana July, 2010 , p. 11.

❐❐❐