



Study on adoption behavior of farmers towards Drip Irrigation System (DIS) in Khargone Block of Khargone District (M.P.), India

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Abstract:

Water is the most precious natural resource; it is essential for agricultural development and all organic life on the earth. Drip system is relatively a new concept of irrigation, which has developed over the last decade throughout the world. importance of drip irrigation system. So for as, in regards to its adoption is found to low due to its higher cost. In respect of this a study was conducted to analyse the adoption behaviour of drip irrigation system in Khargone district with the specific objective. Khargone Block of Khargone district was selected purposively for the present study. From selected 8 villages sample of 120 farmers were taken using proportionate sampling technique. structured and pretested interview schedule was prepared for the purpose of collecting information from respondents It was concluded that higher number of the farmers found to have partial level of knowledge regarding drip irrigation system followed by perfect and no knowledge. Higher number of the respondents had partial adoption level of drip irrigation system in study area followed by perfect and no adoption.

A national policy for water must concern itself primarily with the optimum management of the country's renewable fresh water resources, represented by annual precipitation in the form of snow and rain. Since most of this precipitation occurs during the relatively short monsoon season, it is necessary that we must aim at its conservation to the maximum possible extent, so that water may be available for agricultural, domestic and industrial uses throughout the year. Since, further, the demand for water is not only already in excess of its supply but is also growing steadily in all sectors, we must make sure that this scarce resource is used with the utmost economy and to the best possible advantage of the community.

The average rainfall rate of India and West Madhya Pradesh is 1186.2 mm and 956.3 mm respectively (Indian Meteorological department). Although, the irrigated area has almost being doubled since inception of the planning about 30 years ago, still about 70 per cent of the gross cultivated area is without proper irrigation.

“Drip irrigation is basically precise and slow application of water in the form of discrete continuous drops, sprayed through mechanical devices, called emitters into the root zone of the plant.” Singh (1995) reported that by the drip system of irrigation, water reaches the roots drop by drop and hence, it is an economic method of irrigation in all seasons.

Drip irrigation system is extremely profitable as it saves 40-70 per cent water as compared to surface irrigation method i.e. flood, sprinkler, furrow, but the drip method reduces labour cost, protects the plants from diseases by minimizing humidity in atmosphere. Besides, soluble fertilizers can also be applied with irrigation water (Anonymous, 2006). Thus, drip irrigation has become a means of hi-tech Agriculture/Horticulture and precision farming. The efficiency of water is enhanced by 90 -95 per cent under drip irrigation system. Bahuguna (1996) stated that by drip system of irrigation, 95 per cent of the irrigation water can be used efficiently and the production may be increased by 30-50 per cent.

The Khargone district is known as for their peculiar character of black soil. The main crops of this area i.e. cotton and chilly, as well as vegetables & fruits also but cotton and chili are the main source of income to the farmers. The annual average rainfall rate of last two years is 753.01 mm (Agricultural Statistics, Bhopal, M.P.) hence water scarcity and sources of irrigation are not sufficient for the cultivation of crops influentially the farmers are to be suffered to this problem and also the district have the highest area covered under drip irrigation system in state i.e. 5291.8 hac. (2010-11 Department of Farmers Welfare and Agriculture Development, Khargone).

Therefore, it was necessary to investigate the knowledge and adoption of drip irrigation system by the farmers in study area.

2.Objective

1- To measure the knowledge and adoption level of drip irrigation system by the farmers.

3.Methods & Material

3.1.Level Of Knowledge

The knowledge for the purpose of present study was operational zed as the amount of understanding information possessed by the farmers regarding drip irrigation system.

3.2.Extent of Adoption

The adoption of drip irrigation system refers to the extent of adoption of dives. The questions were regarding with adoption of system and their consequence effect.

The sample of the study has been selected through multi-stage sampling technique. Khargone Block of Khargone district was selected purposively for the present study because the majority of the farmers being used Drip Irrigation System. A list of villages in the selected block was prepared with the help of RAEO's where farmers were using drip irrigation system. From this list 8 villages was selected randomly out of the list of villages in the block using drip irrigation system. Master list of farmers using drip irrigation system in the selected villages was prepared and a sample of 120 farmers was selected using proportionate sampling technique. The data were collected through a well-structured and pre-tested interview schedule.

4.Result & Discussion

4.1.Knowledge Level Of Drip Irrigation System By The Farmers

Knowledge is generally understood as an intimate acquaintance of an individual with facts. The following table presented the detail about level of knowledge of respondents regarding drip irrigation system.

S.No.	Category	No. of respondents	Percentage
1.	No knowledge	30	25.00
2.	Partial knowledge	55	45.83
3.	Perfect knowledge	35	29.17
	Total	120	100.00

Table 1: Distribution of respondents according to their level of knowledge regarding drip irrigation system.

The result presented in table showed that out of the total respondents, majority of the respondents 45.83 per cent had partial level of knowledge followed by 29.17 per cent respondents had perfect knowledge and 25.00 per cent had no knowledge regarding drip irrigation system respectively.

Thus, it may be concluded that higher number of the farmers found to have partial level of knowledge regarding drip irrigation system followed by perfect and no knowledge about the DIS.

4.2. Adoption Level Of Drip Irrigation System By The Farmers

Drip irrigation system is water saving device and constantly gaining momentum and contributing significantly towards the upliftment of agriculture with limited irrigation water availability. Recognizing the importance of drip irrigation system in farm economy and their contribution to protect from wastage of water, it is necessary to motivate the farmers to adopt drip irrigation system as well as maximum possibilities.

Due to economic and safety point of view, the great emphasis is being paid by both the scientists and extension workers to boost up agriculture production with the use of irrigation particularly with the use of drip irrigation system because there is scarcity of irrigation water. The gain from drip irrigation system is possible only when the farmers adopt this technology as recommended as such. The adoption level of drip irrigation system by selected farmers is presented in table bellow.

S.No.	Category	No. of respondents	Percentage
1.	No adoption	34	28.33
2.	Partial adoption	49	40.83
3.	Perfect adoption	37	30.83
	Total	120	100.00

Table 2: Distribution of respondents according to their level of adoption of drip irrigation system.

The data presented in table indicates that majority of the respondents 40.83 per cent had partial level of adoption regarding drip irrigation system followed by 30.83 per cent had perfect adoption and 28.33 per cent had no adoption level respectively.

Thus, it may be concluded that higher number of the respondents had partial adoption level of drip irrigation system in study area followed by perfect and no adoption.

S.No.	Constraints	Frequency (N=120)	Percentage	Rank
1.	Hardly management practices in drip irrigation system	60	50.00	Ist
2.	Lack of credit facilities for drip irrigation system	59	49.17	IIInd
3.	Risk in adoption of drip irrigation system	58	48.33	IIIrd
4.	Preferring adoption of traditional irrigation system	54	45.00	IVth
5.	Lack of capital for adoption of drip irrigation system	46	38.33	Vth
6.	Drip irrigation system be costly	43	35.83	VIth
7.	Lack of technical knowledge about drip irrigation system	42	35.00	VIIth
8.	Lack of training facilities regarding drip irrigation system	38	31.67	VIIIth
9.	Lack of information about drip irrigation system	35	29.17	IXth
10.	Lack of proper knowledge for adoption of drip irrigation system	29	24.17	Xth
11.	Lack of proper facilities regarding drip irrigation system	25	20.83	XIth

Table 3: Constraints faced by respondents in adoption of drip irrigation system

4.3. Knowledge Level Of Drip Irrigation System By The Farmers

Knowledge is one of the important factors for adoption of new technology on farm level. It revealed from the present study that higher number of the farmers found to have partial

level of knowledge regarding drip irrigation system. The reason for that result is to be that the drip irrigation system is not popular among the general farmers in the study area.

4.4. Adoption Level Of Drip Irrigation System By The Farmers

The "adoption behavior" is the mental process through which an individual passes from first hearing of an innovation to its final adoption, while adoption is a decision to continue the full use of an innovation. Generally, the farmers do not adopt technology practices fully. There is generally found partial adoption by farmers. As a result, the gap always appears between the recommended technology and their use at farmer's field, hence; need to enhance the level of adoption of drip irrigation system by the farmers in study area. It revealed from the present study that higher number of the respondents had partial adoption level of drip irrigation system in study area.

5. Constraints In Adoption Of Organic Farming Practices

The major constraints as perceived by the respondents are as per the frequency level of respondents and ranked accordingly the views at the time of collecting data were lack of hardly management practices in drip irrigation system (Ist ranked) viewed by 50.00 per cent of respondents followed by lack of credit facilities for drip irrigation system (IInd ranked) viewed by 49.17 per cent, Risk in adoption of drip irrigation system (IIIrd ranked) viewed by 48.33 per cent, preferring adoption of traditional irrigation system (IVth ranked) viewed by 45.00 per cent, lack of capital for adoption of drip irrigation system (Vth ranked) viewed by 38.33 per cent, drip irrigation system be costly (VIth ranked) viewed by 35.83 per cent, Lack of technical knowledge about drip irrigation system (VIIth ranked) viewed by 35.00 per cent, Lack of training facilities regarding drip irrigation system (VIIIth ranked) viewed by 31.67 per cent, Lack of information about drip irrigation system (IXth ranked) viewed by 29.17 per cent, Lack of proper knowledge for adoption of drip irrigation system (Xth ranked) viewed by 24.17, Lack of proper facilities regarding drip irrigation system (XIth ranked) viewed by 20.83 per cent of the total respondents respectively.

6.Reference

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