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Constraints experienced and suggestion encountered by the drip owners in adoption of drip irrigation system

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Abstract
The present study was designed to study the constraints and suggestion encountered by the drip owners in adoption of drip irrigation system. A multistage random sampling technique was used for selection of talukas, villages and respondents. Sabarkantha district was selected purposively. Among the different talukas of Sabarkantha district Idar, Vadali and Himmatnagar talukas were randomly selected. Five villages were selected from each selected taluka on the basis of maximum number of drip owners. Thus, total 15 villages having highest number of drip owners were selected. A list of farmers who installed drip irrigation system on their farm was prepared for each selected village. Ten respondents from each village were selected by using random sampling techniques making a sample of 150 respondents. The major constraints faced by the drip owners were: Clumsy procedure for getting loan/subsidy, frequent clogging of drippers due to saline substances or other reasons and damage caused by the rodents to the system. Whereas, the important suggestions endorsed by the drip owners were: mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons, services after sales from the company dealers and prevention from the rodent's damage caused to the drip system.

Keywords: Constraints, suggestions, drip owners, drip system

Introduction
At present various schemes of central and State Government on drip irrigation are being executed through Agriculture and Horticulture departments. It is experienced that farmers are getting confused due to the fact that the procedure for getting assistance, norms of assistance, terms and conditions *etc*., vary from scheme to scheme and as a result some administrative difficulties are experienced in implementing the scheme. In order to inspire the farmers of the state to maximize agriculture production at minimum cost and to increase their income by adopting scientific management of water and to bring revolutionary transformation of the agriculture scenario, the Government decided to create separate identity which can transparently implement the schemes in the state.

The Government of Gujarat announced formation of Gujarat Green Revolution Company Limited (GGRCL) in 2005, which is working as middle man between farmers and private agencies. This company is working for drip irrigation in Gujarat. GGRCL is aimed to provide professional services on Micro Irrigation System coupled with required equipment's and essential agro inputs to the farmers of Gujarat, either outsourced or self-produced, to bring Second Green Revolution in consonance with the Agriculture policy of Gujarat Vision-2010, so as to save water and energy, beside multiple benefits to improve agricultural productivity and farmer's prosperity at large.

Looking to the high installation cost of the micro irrigation system and to encourage cultivator for its adoption, Central as well as State Governments have sanctioned different subsidy schemes. For its maximum adoption the State Government have approved 50 per cent subsidy on the installation cost.

Installation of the drip irrigation system can be done by self-finance and bank finance procedure. Drip irrigation is a technological innovation for stepping up production with limited water. With this incentive and with the enthusiasm of farmers, this advanced method is catching up well in the Gujarat state for fruits, vegetables and cash crops.

Objective

1. To know the constraints experienced by the drip owners in adoption of drip irrigation system
2. To seek the suggestions encountered by the drip owners in adoption of drip irrigation system

Methodology

The present study was confirmed to "*Ex-Post Facto*" research design as the independent variables had already operated in the study area. The multistage random sampling technique was used for selection of talukas, villages and respondents. Sabarkantha district was selected purposively. Among the different talukas of Sabarkantha District Idar, Vadali and Himmatnagar talukas were randomly selected. Five villages were selected from each selected taluka on the basis of highest number of drip owners. Thus, total 15 villages having highest number of drip owners were selected. A list of farmers who installed drip irrigation system on their farm was prepared for each village. Ten respondents from each village were selected by using random sampling techniques making a sample of 150 respondents. The data were collected with the help of structured interview schedule. The collected data were coded, classified, tabulated and analysed by using the statistical tools such as frequency and per cent.

Results and Discussion

A. Constraints experienced by the drip owners in adoption of drip irrigation system

As far as the problems confronting the farmers in adoption of drip irrigation system are concerned with their certain circumstances, it is well known fact that the constraints in adoption of improved technology can never be removed, but they may be minimised. The drip owners were asked to express their constraints in adoption of drip irrigation system. Frequencies and per cent were computed and ranked accordingly. The data in this regard are presented in Table 1.

Table 1: Distribution of drip owners according to constraints experienced in adoption of DIS (n = 150)

Sr. No.	Constraints	Frequency	Per cent	Rank
1	Clumsy procedure for getting loan/subsidy	133	88.66	I
2	Installation cost is very high	76	50.66	VI
3	Lack of technical knowhow and guidance before and after adoption	44	29.33	VIII
4	Damage caused by the rodents to the system	105	70.00	III
5	Frequent clogging of drippers due to saline substance or other reasons	122	81.33	II
6	Lack of services after sales from the company dealers	103	68.66	IV
7	Non-availability of skilled labour for repairing DIS when required	91	60.66	V
8	Difficult to maintain required water pressure	24	16.00	XI
9	Non- availability of spare parts when required	42	28.00	IX
10	Maintenance cost is very high	70	46.66	VII
11	Difficulty in Interculturing	35	23.33	X

A critical look in the Table 1 bring into focus that among all the eleven problems in adoption and operation of drip irrigation system, "clumsy procedure for getting loan/ subsidy" (88.66 per cent) ranked first. Frequent clogging of drippers due to saline substances or other reasons (81.33 per cent) ranked second. Damage caused by the rodents to the system (70.00 per cent) ranked third. Lack of services after selling by the company dealers (68.66 per cent) ranked fourth. Non-availability of skilled labour for repairing DIS when required (60.66 per cent) ranked fifth. High installation cost (50.66 per cent) ranked sixth. Very high Maintenance cost (46.66 per cent) ranked seventh. Lack of technical knowhow and guidance before and after adoption (29.33 per cent) ranked eighth. Non-availability of spare parts (28.00 per cent) ranked ninth. Difficulty in inter culture operations (23.33 per cent) ranked tenth. Difficult to maintain required water pressure (16.00 per cent) ranked eleventh.

B. Suggestions to overcome the constraints faced by the drip owners in adoption of DIS

Suggestions were collected from the drip owners to overcome their constraints and difficulties for better management of drip irrigation system. The responses were converted into frequency and per cent. On the basis of per cent the rank was assign to each suggestion.

Table 2: Distribution of drip owners according to their suggestions to overcome constraints faced by them in adoption of DIS (n = 150)

Sr. No.	Suggestions	Frequency	Per cent	Rank
1	Services should be provided after sales from the dealers	88	58.66	IV
2	Maintenance cost should be very less	58	38.66	VII
3	Services after sales from the company after adoption of DIS	124	82.66	II
4	Mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons should be demonstrated to the farmers	131	87.33	I
5	Prevention from the rodents damage caused to the drip system should be minimized	110	73.33	III
6	Availability of skilled labour for repairing DIS whenever required	74	49.33	V
7	Installation cost should be very less	62	41.33	VI

As seen in Table 2 the important suggestions endorsed by the drip owners were "mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons should be demonstrated to the farmers" (87.33 per cent) ranked first. Services after selling by the company after adoption of DIS (82.66 per cent) ranked second. Prevention from the rodent's damage caused to the drip system should be minimised (73.33 per cent) ranked third. Services should be provided after sales from the dealers (58.66 per cent) ranked fourth.

While the suggestion considered less important, but also essential were availability of skilled labour for repairing DIS

whenever required (49.33 per cent) ranked fifth. Installation cost should be very less (41.33 per cent) ranked sixth. Maintenance cost should be very less (38.66 per cent) ranked seventh.

Conclusion

It can be concluded from the study that he major constraints faced by the drip owners were: clumsy procedure for getting loan/subsidy, frequent clogging of drippers due to saline substances or other reasons and damage caused by the rodents to the system. While the important suggestions endorsed by the drip owners were: mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons, services after selling by the company dealers and prevention from the rodent's damage caused to the drip system.

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