

CONSTRAINTS FACED BY THE POTATO GROWERS IN ADOPTION OF MICRO IRRIGATION TECHNOLOGY

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ABSTRACT

The study was carried out in Banaskantha district of Gujarat state 2018-2019. The multistage sampling (three stage) technique was used for selection of taluka, villages and respondents. Among the 14 talukas of Banaskantha district Deesa, Palanpur and Dantiwada were purposively selected from Banaskantha district on the basis of maximum potato crop area. Five villages were selected from each selected taluka on the basis of highest number of potato growers. Thus, total 15 villages having highest number of potato growers were selected. A list of farmers who have installed micro irrigation technology on their farm was obtained from taluka panchayat office. Ten respondents from each village were selected by using random sampling techniques making a sample of 150 respondents. The major constraints faced by the potato growers in adoption of micro irrigation technology were; clumsy procedure for getting loan/subsidy (76.00 per cent), maintenance cost is very high (65.33 per cent), installation cost is very high (54.00 per cent), non-availability of skilled labour for repairing MIT whenever requires (54.00 per cent), frequent clogging of nozzle due to saline substance or other reasons (52.66 per cent), lack of services after sales from the company dealers (46.66 per cent), lack of technical knowhow and guidance before and after adoption (40.66 per cent), difficult to maintain required water pressure (26.00 per cent), non-availability of spare parts when requires (22.66 per cent), difficulty in interculturing (21.33 per cent).

Keywords: micro irrigation technology, Adoption, constraints, potato growers

INTRODUCTION

The water is needed for diverse purposes viz., agriculture, industry, domestic use, energy sector etc. In India, only Agriculture sector accounts for over 85 percent of total water uses (Katkar 2006). The term “micro-irrigation” describes a family of irrigation systems that apply water through small devices. These devices deliver water onto the soil surface very near the plant or below the soil surface directly into the plant root zone. There are main two types of micro irrigation; Drip irrigation, Sprinkler irrigation. Drip irrigation is defined as the practice, slow application of water in the form of discrete or continuous or tiny streams or miniature sprays through mechanical devices called emitters or applicators located at selected points along water delivery lines. Sprinkler irrigation is a method of applying irrigation water which is similar to natural rainfall; water is distributed through a system of pipes usually by pumping. Potato (*Solanum tuberosum*), annual plant in the nightshade family (*Solanaceae*), grown for its starchy edible tubers. Taking this in view, the present study entitled as was planned with the following objectives.

OBJECTIVES

- (1) To study constraints faced by the potato growers in adoption of micro irrigation technology
- (2) To seek the Suggestions from potato growers to overcome the constraints faced by them in adoption of micro irrigation technology

METHODOLOGY

The present investigation was carried out in Banaskantha district of Gujarat state during 2018-19. The present study was confirmed to “*Ex-Post Facto*” research design as the independent variables were already operated in the study area. The multistage sampling (three stage) technique was used for selection of taluka, villages and respondents. Among the 14 talukas of Banaskantha district Deesa, Palanpur and Dantiwada were purposively selected from Banaskantha district on the basis of maximum potato crop area. Five villages were selected from each selected taluka on the basis of highest number of potato growers. Thus, total 15 villages having highest number of potato

growers were selected. A list of farmers who have installed micro irrigation technology on their farm was obtained from taluka panchayat office. Ten respondents from each village were selected by using random sampling techniques making a sample of 150 respondents.

RESULTS AND DISCUSSION

As far as the problems confronting the potato

growers in adoption of micro irrigation technology 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 minimized. The potato growers were asked to express their constraints in adoption of micro irrigation technology. Frequencies and per cent were computed and ranked accordingly. The data in this regard are presented in Table 1.

Table 1 : Distribution of potato growers according to constraints faced in adoption of MIT

(n = 150)

Sr. No.	Constraints	Frequency	Per cent	Rank
1	Clumsy procedure for getting loan/subsidy	114	76.00	I
2	Maintenance cost is very high	098	65.22	II
3	Installation cost is very high	090	60.00	III
4	Non-availability of skilled labour for repairing MIT whenever required	081	54.00	IV
5	Frequent clogging of nozzle due to saline substance or other reasons	079	52.66	V
6	Lack of services after sales from the company dealers	070	46.66	VI
7	Lack of technical knowledge and guidance before and after adoption	061	40.66	VII
8	Difficult to maintain required water pressure	039	26.00	VIII
9	Non-availability of spare parts when required	034	22.66	IX
10	Difficulty in interculturing	032	21.33	X

A critical look in the Table 1 bring into focus that among all the eleven problems in adoption and operation of micro irrigation technology, clumsy procedure for getting loan/subsidy (76.00 per cent) ranked first. Maintenance cost is very high (65.33 per cent) ranked second. Installation cost is very high (54.00 per cent) ranked third. Non-availability of skilled labour for repairing MIT whenever requires (54.00 per cent) ranked fourth. Frequent clogging of nozzle due to saline substance or other reasons(52.66 per cent)ranked fifth. Lack of services after sales from the company dealers (46.66 per cent) ranked sixth. Lack of technical knowhow and guidance before and after adoption (40.66 per cent) ranked seventh. Difficult to maintain required water pressure (26.00 per cent)

ranked eighth. Non- availability of spare parts when requires (22.66 per cent) ranked ninth. Difficulty in interculturing (21.33 per cent) ranked tenth (Safi 2017) and (Parmar 2016).

Suggestions from potato growers to overcome the constraints faced by them in adoption of micro irrigation technology

Suggestions were collected from the potato growers to overcome their constraints and difficulties for better management of micro irrigation technology. The responses were converted into frequency and per cent. On the basis of per cent the rank was assign to each suggestion. The data in this regard are presented in Table 2.

Table 2 : Distribution of potato growers according to their suggestions to overcome constraints faced by them in adoption of MIT

(n = 150)

Sr. No.	Suggestions	Frequency	Per cent	Rank
1	Step should be taken by the Government for clumsy procedure of loan/subsidy	131	87.33	I
2	Mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons should be demonstrated to the farmers	115	76.67	II
3	Knowledge about acid treatment should be provided	112	74.66	III
4	Training should be provided to farmers on how to use micro irrigation technology	097	64.67	IV
5	Services after sales from the company after adoption of MIT	091	60.66	V
6	Step should be taken by the Government to make visit by company dealers forcefully	083	55.33	VI
7	Availability of spare parts in local market with reasonable rate	071	47.33	VII

As seen in Table 2 the important suggestions endorsed by the potato growers were step should be taken by the Government for clumsy procedure of loan/subsidy (87.33 per cent) ranked first. Mitigation techniques to overcome frequent clogging of drippers due to saline substance or other reasons should be demonstrated to the farmers (83.33 per cent) ranked second. Knowledge about acid treatment should be provided (74.66 per cent) ranked third. Training should be provided to farmers on how to use micro irrigation technology (64.67 per cent) ranked fourth. Services after sales from the company after adoption of MIT (60.66 per cent) ranked fifth. Step should be taken by the Government to make visit by company dealers forcefully (55.33 per cent) ranked sixth. Availability of spare parts in local market with reasonable rate (47.33 per cent) ranked seventh (Safi 2017).

CONCLUSION

From above findings, it can be conclude that the constrains were the most important problems of micro irrigation technology faced by the potato growers in adoption and operation of micro irrigation system were, clumsy procedure for getting loan/subsidy, maintenance cost is very high, installation cost is very high, non-availability of skilled labour for repairing MIT when required, frequent clogging of nozzle due to saline substance or other reasons, Whereas minimum problems faced were, lack of services after sales from the company dealers, lack of technical knowhow and guidance before and after adoption, non- availability of spare parts when required, difficulty in interculturing and difficult to maintain required water pressure. The major suggestions were step should be taken by the Government for clumsy procedure of loan/subsidy, Mitigation techniques to overcome

frequent clogging of drippers due to saline substance or other reasons should be demonstrated to the farmers, Knowledge about acid treatment should be provided, Training should be provided to farmers on how to use micro irrigation technology, Services after sales from the company after adoption of MIT, Step should be taken by the Government to make visit by company dealers forcefully, Availability of spare parts in local market with reasonable rate.

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