AN EMPIRICAL STUDY ON DRIP IRRIGATION

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Abstract: Land and water are the basic needs for agriculture and economic development of the country. According to International Water Management Institute (IWMI), one-third of the world's population will face absolute water scarcity by the year 2025. Agriculture which consumes more than 80% of the country's exploitable water resources. The overall development of the agriculture sector and the intended growth rate in GDP is largely dependent on the judicious use of the available water resources. Hence, this Scheme on Micro Irrigation (MI), which aims at increasing the area under efficient methods of irrigation viz. drip irrigation. Drip irrigation is an efficient method of providing irrigation water directly into soil at the root zone of plants and thus, minimizes conventional losses such as deep percolation, runoff and soil erosion. It also permits the utilization of fertilizers, pesticides and other water-soluble chemicals along with irrigation water resulting in higher yields and better quality produce. Drip irrigation system is regarded as solution for many of the problems in dry land agriculture and improving the efficiency in irrigated agriculture. Keeping all these in view, the present study was designed to study the extent of benefits derived from drip irrigation in horticultural crops and to identify the constraints encountered by farmers in adopting the drip irrigation for horticultural crops. The results revealed that majority of drip irrigation farmers had expressed the advantages like saving of water, saving in labour cost for irrigation, increased yield, water saving, labour saving, increased quality of produce, reduced weed growth, extended self-life of produce and uniform application of water. The constraints encountered by the farmers had, problem of non-availability of quality material, no follow up services by drip agencies, high initial investment cost, lack of capital to cover maximum holding under drip irrigation, delay in sanction of loan, leakage in the present drip system. Hence, it is clear from the study, drip irrigation agencies, financing institutions and others to supply adequate standard spare parts and other appropriate measures to ensure the satisfactory situation for proper adoption of drip irrigation method.

Keywords
Water scarcity, Scheme on Micro Irrigation, Drip irrigation, Dry land agriculture, Irrigated agriculture

Introduction:

Land and water are the basic needs for agriculture and economic development of the country. According to International Water Management Institute (IWMI) state that one-third of the world's population will face absolute water scarcity by the year 2025. Irrigation has been considered essential for the fast growth in agriculture which consumes more than 80% of the

country's exploitable water resources. The overall development of the agriculture sector and the intended growth rate in GDP is largely dependent on the judicious use of the available water resources. Hence, Microirrigation technologies are aggressively promoted in India by the central government, state governments and many nongovernmental organizations (NGOs), both local and international, by providing different kinds of financial, institutional and technical support systems. These technologies are promoted primarily for one or more of the following reasons: as a means to save water in irrigated agriculture, as a strategy to increase income and reduce poverty, and to enhance the food and nutritional security of rural households. This Scheme on Micro Irrigation (MI), which aims at increasing the area under efficient methods of irrigation viz. drip irrigation. Drip irrigation is an efficient method of providing irrigation water directly into soil at the root zone of plants and thus, minimizes conventional losses such as deep percolation, runoff and soil erosion. Unlike surface irrigation, drip irrigation is more suitable and economical if it is introduced in water scarce areas having undulated topography, shallow and sandy soils and for wide spaced high value crops. It also permits the utilization of fertilizers, pesticides and other water-soluble chemicals along with irrigation water resulting in higher yields and better quality produce. Hence, drip irrigation system is regarded as solution for many of the problems in dry land agriculture and improving the efficiency in irrigated agriculture. In this direction various schemes to promote drip irrigation are being implemented. Thus, in the process of achieving higher efficiency of drip irrigation, it is necessary for the drip irrigation farmers to know the benefits and the constraints of the system.

Objective:

Keeping all these in view, the present study was designed to study the extent of benefits derived from drip irrigation in horticultural crops and to identify the constraints encountered by farmers in adopting the drip irrigation for horticultural crops.

Methodology:

The present study was conducted Dindigul district of Tamilnadu. The expost -facto research design was used for the study. A sample consisting of 30 drip irrigation farmers were selected randomly from the purposively selected three villages of R.P. Pudhur, Manjanaickenpatty and chatrapatti in Oddanchatram taluks, where in maximum area of horticultural crops is irrigated by drip method. The questionnaire was developed keeping the objectives of the study in the

background, presented in non - sampling area and then employed for collecting the required data from the respondents.

Results and discussion:

Collected information were analysed and results are presented in the following table.

Table 1. Benefits of drip irrigation

S. No.	Benefits of Drip irrigation farmers	No. expressing the advantages	
		Number (n= 30)	Per cent (%)
1.	Saving of water	28	93.33
2.	Saving of labour cost for irrigation	22	73.33
3.	Uniform application	27	90.00
4.	Improved quality of produce	20	66.67
5.	Easy method of irrigation	26	86.67
6.	Decreased weed growth	21	70.00
7.	Increased crop yield	23	76.67

*Multiple responses possible

The above table revealed that majority of the respondents opined that saving of water (93.33 %) is major benefit of drip irrigation and followed by Uniform application (90.00 %), Easy method of irrigation (86.67 %), Increased crop yield(76.67 %), Saving of labour cost for irrigation(73.33 %), Decreased weed growth(70.00%) and Improved quality of produce (66.67 %).

Constraints encountered by the drip irrigation growers

The constraints encountered by the farmers had possessed the problem of non-availability of quality material, no follow up services by drip agencies, high initial investment cost, lack of capital to cover maximum holding under drip irrigation and delay in sanction of loan, leakage in the present drip system

Conclusion

The Benefits encountered by the farmers are saving of water, uniform application and easy method of irrigation and the constraints are problem of non-availability of quality material and no follow up services by drip agencies. It is clear from the study that the drip irrigation agencies, financing institutions and others to supply adequate standard spare parts and other appropriate measures to ensure the satisfactory situation for proper adoption of drip irrigation method.

Reference:

Kandaswamy. P., 1990. Drip irrigation need for more scientific research for large scale adoption. *Kisan World,* 17: 31-32.

Patil, S. M., 1990. Drip irrigation very successful in Banana too. *Kisan World*, 17: 28-29.

Shivakumar, H. K., Ramachandrappa, B. K., Nanjappa, H. V .and Roopadevi, V. D., 2001. Micro irrigation macro future. *Agro India,* 5: 18-19.