



PROBLEMS FACED BY THE CULTIVATORS USING DRIP IRRIGATION SYSTEM IN GROUNDNUT CULTIVATION : A STUDY IN ERODE DISTRICT OF TAMIL NADU

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Abstract

Drip irrigation is introduced primarily to save water and increase the water use efficiency in agriculture. However, it also delivers many other economic and social benefits to the society. Reduction in water consumption is using drip method of irrigation over the surface method of irrigation. Groundnut is the single largest source of edible oil in India and constitutes roughly about 50 per cent of the total oilseed production. This paper aims to find out the Problems faced by the cultivators to prefer groundnut cultivation under drip irrigation system in Erode district. Against this background, in this present study focuses on the cultivators are faced the problems to cultivate the groundnut under drip irrigation system like Improper after sales service, Risk in applying Fertilizer, Used only one Crop, Not suitable for Small land holding and High cost of maintenance.

Keywords: *Introduction, Drip Irrigation, Sources and Problems.*

INTRODUCTION

Food production and food security of a region can be sustained only if the progress in development of infrastructure is assured and natural resource base including soil and water are conserved. The groundnut is cultivable in all types of climate. However, dry climate with sufficient sunlight, loamy soil and medium rainfall are very essential for the cultivation. Groundnut is raised mostly as a rain fed Kharif crop, being sown from May to July, depending on the monsoon rains. In some areas of where the monsoon is delayed, it is sown as late as August or early September.

Groundnut is one of the major oilseed crops cultivated across India. Known popularly as edible oilseed crop, groundnut (*Arachis hypogaea*) is cultivated mainly for human consumption. It is a valuable source of nutrient and every part of groundnut has commercial value. The green leaves and stems of plants are used as animal feed. The shells of the pods acquired during threshing are also used as cattle feed. Being a leguminous crop, groundnut is also grown in crop rotation as it synthesises atmospheric nitrogen.

As an irrigated crop it is grown between January and March and between May and July. There are three types of varieties in groundnut, bunch types, spreading and semi-spreading types. The bunch types have light green foliage,

comparatively broad leaflets and mature early. However, they are usually susceptible to tikka disease. The spreading types usually have dark green foliage with smaller leaflets.

These are usually late in maturity. The semi-spreading varieties are intermediate between the bunch and the spreading types. Groundnut cultivation practices has been examined with reference to examine the groundnut preparation of land, soil, selection of seed, sowing, climatic conditions, weed control, disease and pesticides, fertilizers and nutrition, irrigation and harvesting.

DRIP IRRIGATION

Drip irrigation is introduced primarily to save water and increase the water use efficiency in agriculture. However, it also delivers many other economic and social benefits to the society. Reduction in water consumption is using drip method of irrigation over the surface method of irrigation.

Drip method of irrigation (DMI) has the potential to save substantial water and electrical energy as well as increase the productivity of crops. The income and resource impact of drip irrigation including its benefit–cost pattern using survey data in crops like groundnut, which is an important oilseed crop in India. The results show that DMI can save about 34% of cultivation cost, 36% of water and electrical energy and increase about 79% of productivity over the same crop cultivated under conventional flood method of irrigation. The drip adopters are also able to generate an additional farm business income of Rs 25,911/acre (1 USD = INR 74.92, 1 acre = 4,047 m²) over the non-drip adopters. The net present worth and benefit–cost ratio estimated using discounted cash flow technique shows that investment in drip irrigation is economically highly viable for groundnut cultivating farmers.

SOURCES

TYPE OF LAND USED IN GROUNDNUT CULTIVATION

The land is an important factor for producing any agricultural commodities. Cultivation of groundnut lands are classified into two categories, namely, rain fed and irrigation. The Ownership of land can be categorized into three, viz., Own land, leased in and leased out.

SOURCE OF IRRIGATION USED IN GROUNDNUT CULTIVATION

Irrigation is the major part of every plants grow. The sample cultivators are used irrigation to the groundnut cultivation. Source of water from lands are classified into four types, namely, rain fed, open well, canal and bore well.

AGRICULTURAL EQUIPMENT USED IN GROUNDNUT CULTIVATION

Agricultural equipment are required for any production of agricultural sector. The cultivators are having owned planting, weeding, Fertilizer distributing and harvesting machines. The agricultural equipments are used for groundnut cultivation like, tractor, tiller, sprayer and the seed drill.

SOURCES OF FUNDS USED IN GROUNDNUT CULTIVATION

Fund is required to maintain every business in a smooth way and become a successful one. Agricultural sector is need a huge fund for cultivation and marketing of every plant during the time of cultivation. The sample cultivators are collected their funds to cultivation of groundnut from Own fund, Private agents, Relatives and Friends, Regional Rural Banks, Commercial Banks, Co-Operative banks, Government subsidies and Lease Finance.

STATEMENT OF THE PROBLEM

Drip irrigation plays a very crucial role in agricultural sectors and which helps to increase the groundnut cultivation. The problems faced by the cultivators to cultivate groundnut under drip irrigation system like as Improper after sales service, Risk in applying fertilizer, Used only one crop, Not suitable for small land holding, Problems in getting subsidy, Rat, rodent, insect & human damage to drip lines, Problems in drip equipment, High cost of maintenance, Risk during harvest season and Need of acid treatment. In Erode district, groundnut seems a pivotal role in the economy of district and it is cultivated mainly under un irrigated conditions. In recent years, drip irrigation system is used by the farmers to increase their groundnut crop productivity and income.

The groundnut cultivators those who adopted drip irrigation system are not completely relived from their worries till now. Lack of training is also a major cause which restricted the groundnut cultivators to adopt the specified crop management practices. The present study is focused to find out answer to the following question:

- What are the problems faced by the cultivators to cultivate groundnut under drip irrigation system?

REVIEW OF LITERATURE

Gerald McElwee et al. (2016) conducted a study in Europe and they discussed that explore the strategy of an enterprising farmer. They found that agriculture has faced dramatic pressures for restructuring, and facilitation of the strategic skills of farmers. Hence, they suggested that a stronger entrepreneurial orientation have been suggested as a possible solution for the emerging problems.

Khusro Moin and Kamil (2018) discussed the prospects, potential and challenges of drip irrigation in India. They focused about the economic condition of water level in India and the comparative study of surface irrigation and the drip irrigation with the cost benefit analysis, productivity of crops, labour and efficiency level. Finally analysed that the adoption rate of drip irrigation in India and concludes the reason for farmers not to adopt the drip irrigation is the high initial cost occurred which is not suitable for the small and medium farmers.

Gupta and Shakuntla (2018) analysed that Acreage response of major oilseed crops in Punjab. They noted that since groundnut is an unirrigated crop, as the irrigated area increases, it is bound to decrease. It is clearing that amply ported by the negative significant value on gross irrigated area variable. So, finally emerged from the computed elasticity of coefficient and it is suggests that groundnut cultivation in Punjab is confined to marginal lands which are not very prone to irrigation facilities.

Rathore et al. (2021) highlighted that growth and yield components decreased with a reduction in irrigation level, with growth declining by 30.1 % and yield components increasing to 60.8%. Moreover, the irrigation system is also an essential factor affecting the growth and yield of peanut crops.

SCOPE OF THE STUDY

This study is confined to Erode district of Tamil Nadu. Groundnut is being grown in almost all the districts of the state. Erode district is one of the leading districts in groundnut cultivation. This study is an attempt to examine the factors influencing the cultivators to cultivate groundnut under drip irrigation system. The present study is based on the primary data. The required data have been collected from the groundnut cultivators with help of well structure Interview Schedule.

OBJECTIVE OF THE STUDY

The following is the important objective of the present study.

- To find out the problems faced by the cultivators while using drip irrigation system in groundnut cultivation.

SAMPLING DESIGN AND METHODOLOGY

This study is an empirical research based on survey method. The present study is confined to Erode district of Tamil Nadu. The Erode district is one of the leading districts in groundnut cultivation. Hence, this district has been purposely selected. It is decided to use Kendall's Co-efficient of Concordance technique. As per this list, it is found that there are 1,048 groundnut cultivators. only 130 of the sample groundnut cultivators have been selected for further analysis. The required primary data have been collected from the period of March 2024 to August 2024.

PROBLEMS FACED BY THE GROUNDNUT CULTIVATORS USING DRIP IRRIGATION SYSTEM IN GROUNDNUT CULTIVATION

To find out the problems faced by the groundnut cultivators to cultivate groundnut in Erode district under drip irrigation system under Kendall's Co-efficient of Concordance technique was used. Kendall's Co-efficient of Concordance has been applied to find whether there is any similarity among the cultivators is assigning the ranks to the given problems. Kendall's 'W' ranges from 0 (No agreement) to 1(Complete agreement).Higher the value of Kendall's 'W' more will be the similarity among the cultivators is assigning the ranks whereas, lower the value of Kendall's 'W' less will be the similarity among the cultivators assigning the ranks.

Mean scores have been calculated for the problems faced by the cultivators while using the drip irrigation system in groundnut cultivation. Lower mean score shows higher performance of the respective problem and are disclosed in Table No. 1.

For the present study focuses ten problems were taken into consideration on the basis of outcome of the study.

TABLE NO 1.

PROBLEMS FACED BY THE GROUNDNUT CULTIVATORS USING DRIP IRRIGATION SYSTEM IN GROUNDNUT CULTIVATION:

KENDALL'S CO-EFFICIENT OF CONCORDANCE ('W')

Problems	TS	MS	RANK	Kendall's('W')
Improper after sales service	5324	7.58	VI	0.0027
Risk in applying Fertilizer	3942	5.27	II	
Used only one Crop	6027	8.06	VIII	
Not suitable for Small land holding	3516	5.15	I	
Problems in getting Subsidy	5883	7.96	VII	
Rat, rodent, insect & human damage to drip lines	7014	8.62	X	
Problems in Drip Equipment	4935	7.01	V	
High cost of maintenance	4529	6.65	IV	
Risk during Harvest season	4138	6.03	III	
Need of Acid Treatment	6423	8.23	IX	

Table 1 displays that the sample respondents those who are all faced the problems to cultivate groundnut under drip irrigation system has been calculated by Kendall's Co-efficient of Concordance. From the above table it is observed that Not suitable for Small land holding is foremost problem (5.15), Risk in applying Fertilizer (5.27) and also Risk during Harvest season (6.03) are the major problems faced by the groundnut cultivators to cultivate groundnut under drip irrigation system in Erode district of Tamil Nadu.

SUGGESTION

In the present study, it is found that Not suitable for Small land holding has been identified as an important problem considered by the groundnut cultivators to cultivate groundnut under drip irrigation system and the same has been ranked first. The Central and State government provide more subsidies to the small level land holders and they are tried to adopt drip irrigation system, for their groundnut cultivation and it will increase the productivity and reduce the cost of their production as possible.

CONCLUSION

From the foregoing analysis, it is obvious that present drip irrigation system for groundnut cultivation is Not suitable for Small land holding has been identified as the major problem faced by the cultivators to cultivate groundnut under drip irrigation system. On the basis of the findings in the present study, viable suggestion have been offered. The suggestive measurement have been considered by the central and state government, planners and decision making authorities for the betterment of the groundnut cultivators, definitely groundnut cultivators life will be shine.

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