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Original Research Paper

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FACTORS INFLUENCING THE CULTIVATORS TO PREFER GROUNDNUT CULTIVATION UNDER DRIP IRRIGATION SYSTEM: A STUDY IN ERODE DISTRICT OF TAMIL NADU

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ABSTRACT Drip irrigation is one of the latest innovations for applying water to row planted, widely spaced crops, especially in the water scarce areas. 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 factors influencing 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 highly influenced to cultivate the groundnut due to Less water, High yield, Less labour, Durability and Government subsidy.

KEYWORDS : Introduction, Drip Irrigation, Sources and Factors.

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.

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 one of the latest innovations for applying water to row planted, widely spaced crops, especially in the water scarce areas. There can be considerable saving of water by adopting this method since water can be applied almost precisely and directly in the root zone without wetting the entire area. This technology not only uses each drop of water most efficiently but also results in good crop growth and yield advantage due to stable moisture content maintained always in the root zone of the crop by way of frequent irrigation at shorter intervals.

In drip irrigation system, only a fraction of the soil surface generally between 15 to 60 per cent is wetted. Earlier, drip irrigation was considered as an emerging technology with its application limited to some special crops. The benefits of drip irrigation may include better crop survival, minimal yield variability and improved crop quality.

Drip irrigation has the potential for improving two of the most common contributing factors to N leaching i.e. Over Fertilization and Over Irrigation. Drip irrigation has proved its superiority over other methods owing to direct application of water in the root zone. Drip irrigation can play a vital role in maximizing water use efficiency.

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 factors influencing the cultivators to cultivate groundnut under drip irrigation system is based on the Less water, High yield, Less labour, Durability, Government subsidy, Easy to use fertilizer, Less weeds, Minimum work, Availability of more area and Efficient water management. In Erode district, groundnut seems a pivotal role in the economy of district and it is cultivated mainly under unirrigated 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 such new methods and technologies 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 factors influencing the cultivators to cultivate groundnut under drip irrigation system?

REVIEW OF LITERATURE

Neşe Uzen et al. (2017) focused that the role of micro irrigation in the modern agriculture, which says the micro irrigation system is successful for the horticulture in any kind of weather condition. Which will also increase the yield of the crops, good fertilizer usage, no Stalinization, no disease for crops and the labor cost will also reduce.

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.

Crookston (2019) proposed that the precision farming is one of the top 10 revolutions in the history of agriculture and precision farming is doing the right management practices in the right location, right time and right rate.

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 factors influencing the cultivators to cultivate groundnut under drip irrigation system.

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 Garret Ranking Technique. As per this list, it is found that there are 1,264 groundnut cultivators. only 120 of the sample groundnut cultivators have been selected for further analysis. The required primary data have been collected from the period of January 2024 to June 2024.

FACTORS INFLUENCED BY THE GROUNDNUT CULTIVATORS TO PREFER GROUNDNUT CULTIVATION UNDER DRIP IRRIGATION SYSTEM

To find out the factors influenced by the groundnut cultivators to cultivate groundnut in Erode district under drip irrigation system under Garret ranking technique was used. As per this method, respondents have been asked to assign the rank for all the factors considered by the groundnut cultivators to cultivate groundnut under drip irrigation system and outcome of such ranking have been converted into score value with the help of the following formula and findings are shown in the below Table No 1.

By the Garret ranking technique Table, the present position estimated is converted into scores, then for each factors. The score of each individual are added and then mean value is calculated. The factors having highest mean value is considered to be the most significant.

$$\text{Percent position} = \frac{100(Rij - 0.5)}{Nj}$$

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

Table No 1. Factors Influencing The Cultivators To Prefer Groundnut Cultivation Under Drip Irrigation System: Garrett's Ranking Technique

Factors	Rank	I	II	III	IV	V	VI	VII	VIII	IX	X	Total	TS	MS	Rank
	Rate Scores (x)	82	70	63	58	52	48	42	36	29	18				
Less water	f	13	12	11	13	12	12	13	8	10	16	120	5965	49.71	IV
	fx	1066	840	693	754	624	576	546	288	290	288				
High yield	f	14	13	6	10	12	13	10	15	12	9	120	5734	47.78	X
	fx	1148	910	378	580	624	624	420	540	348	162				
Less labour	f	15	14	13	13	12	8	11	17	13	6	120	6350	52.91	I
	fx	1230	980	819	754	624	384	462	612	377	108				
Durability	f	11	12	10	13	15	13	9	11	11	16	120	5911	49.26	V
	fx	902	840	630	754	780	624	378	396	319	288				
Government subsidy	f	11	10	11	13	10	13	12	13	15	12	120	5816	48.47	VIII
	fx	902	700	693	754	520	624	504	468	435	216				
Easy to use fertilizer	f	11	12	12	10	11	12	14	11	14	14	120	5868	48.90	VII
	fx	902	840	756	580	572	576	588	396	406	252				
Less weeds	f	9	12	13	12	13	10	13	14	11	14	120	5870	48.92	VI
	fx	738	840	819	696	676	480	546	504	319	252				
Minimum work	f	12	12	11	14	13	16	11	8	15	9	120	6120	51.00	III
	fx	984	840	693	812	676	768	462	288	435	162				
Availability of more area	f	14	13	13	12	13	12	13	12	9	10	120	6244	52.03	II
	fx	1148	910	819	696	676	576	546	432	261	180				
Efficient water management	f	10	11	14	12	10	11	14	12	11	14	120	5807	48.39	IX
	fx	820	770	882	696	520	528	588	432	319	252				
TOTAL	∑f	120	120	120	120	120	120	120	120	120	120				

Table 1 displays that the sample respondents those who are most influencing the factors to cultivate groundnut under drip irrigation system has been calculated by Garret Ranking Technique. From the above table it is observed that Less Labour is foremost factor (52.91), Availability of more Area (52.03) and also Minimum Work (51.00) are the major factors influencing 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 Less Labour has been identified as an important factor 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 adopting drip irrigation system, the large number of cultivators are to adopt drip irrigation system for their groundnut cultivation and it will increase the production 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 less labour has been identified as the major factor influenced 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 fruitful.

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