Int.J.Curr.Microbiol.App.Sci (2018) *7*(11): 3496-3502

International Journal of Current Microbiology and Applied Sciences
***ISSN: 2319-7706* Volume 7 Number 11 (2018)**
Journal homepage: http://www.ijcmas.com

Original Research Article https://doi.org/10.20546/ijcmas.2018.711.399

Production and Economics of Turmeric Cultivation

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Keywords

Turmeric (*Curcuma longa* L.), Medicinal purposes

Article Info

Accepted:
26 October 2018
Available Online:
10 November 2018

A B S T R A C T

Turmeric strictly speaking is a condiment crop which has been used for colouring, flavoring and medicinal purposes. Turmeric occupies prominent position among the spices produced in India. It ranks fourth in area and second in production. In the area of export, turmeric occupies second position in terms of quantity and fourth position in the export earnings among the spices. Turmeric the golden spice is widely cultivated in different countries such as India, China, Myanmar, Nigeria, Bangladesh, Pakistan, Sri Lanka, Taiwan, Indonesia etc. Among these countries, India occupies first position in area, and also in production. In India, turmeric is grown in 18 states and Andhra Pradesh, Tamil Nadu, Karnataka and West Bengal are the major turmeric producing states

Introduction

Indian turmeric cultivation and production trend has increased gradually over the past decades and also area of cultivation shows an increasing trend. India accounts for about 80 per cent of world turmeric production (Deepa KM). Turmeric (*Curcuma longa* L.), the ancient and sacred spice of India known as 'Indian saffron', is an important commercial spice crop grown in India.

It is known as the "golden spice" as well as the "spice of life" (Sahoo). India is a major supplier of turmeric to the world with more than 60 per cent share in turmeric trade (Angles S).Turmeric was probably cultivated at first as a dye, and then became valued as condiments as well as for cosmetic purposes. The Arab traders took turmeric to Europe in the thirteenth century during his travels in China in 1280 (Babu N.). Use of turmeric dates back nearly 4000 years to the Vedic culture in India. It is extensively used in Ayurveda, Unani and Siddha medicine as home remedy for various diseases (PreetiRathaur*). Exports in the year 2017-18 are expected to increase based on steady demand for the turmeric based product both in health and pharmaceutical sector (Karvy Comtrade Limited).

Tamil Nadu state occupies the second position in both production of and area under turmeric among all the states in India. Among the districts of Tamil Nadu state, Erode district stands first in both area and production of turmeric. In the year 2006-07, turmeric was cultivated in 7731 hectares in Erode district and the total production was 61813 tonnes (N.

Kiruthika). According to the Bureau of Indian Standards (BIS), 63 spices were grown in India. The spices were grown throughout the country from tropical to temperate climate. India has the highest number of spice varieties in the world (Sarfraz sheikh)

Materials and Methods

In Pudukottai district there are twelve blocks. Among the twelve blocks, Thirumayamis one of the block selected for study purpose. Data were collected from the primary sources namely Famer name, father name, address, age of the farmer, land holding, gender, community, educational qualification and contact number were collected from the selective farmer. For analyzing purpose gross cost, gross return, net return and benefit cost ratio were collected from the identified farmers. The per cent increased over the control was also calculated.

Results and Discussion

The average age of the sample Power Mix T adopters was found to be fifty years. Among the adopters 20 per cent of the farmers are illiterate and 50per cent of the farmers received secondary education and30 per cent of them went for post matriculation. The analysis of the occupation pattern of the sample respondents revealed that all the sample farmers practiced agriculture as main occupation.

The average Turmeric growing area of the sample farmers found to be small and medium holding of land. The major soil type observed among the sample farmers is sandy clay loam and sandy loam. Studies showed that 40-55 per cent of soils are moderately deficient in micronutrients like Zn, Fe, Cu, Mn and Mg, while 25-30 per cent is deficient in B (Boron). Deficiency of other micronutrients occurs in 15 per cent of soils. These deficiencies/limitations reduce yield significantly (Fig. 1–4 and Table 1–5).

Micro nutrient utilization pattern in turmeric

For turmeric Power Mix T was recommended as a foliar spray at 5gm per litre of water once during sixty days after planting and another ninety days after planting are recommended. Micronutrients are those essential elements which are required by plants in very small amounts. Besides promoting plant metabolic activities and growth of the plants, they play a major role in improving quality, size, colour, taste, input use efficiency of fertilizers, water use, disease resistance

The resource farmers are using primary nutrients only for cultivating the turmeric. This might be due to lack of technical knowledge on micro nutrients / Power Mix T. which ultimately reduces the finger yield. They are lack of knowledge about use of proper organic inputs, recommended dose of fertilizers and soil based nutrient recommendations and plant protection chemicals which can boost their yield.

It was revealed that from the study that majority of the farmers were not adopting recommended dose of Micro Nutrients. The demonstrations need to be conducted to educate the farmers to adopt recommended application of Micro Nutrients.

The cost and return structure in Turmeric cultivation for one hectare is presented in the Tale 2. The total cost, the expenditure incurred on cultivation of turmeric was Rs. 43,000/ for control it was Rs. 40,000/. This indicates that the farmers are not adopting recommended practices on various inputs level. The Benefit Cost Ratio (BCR) was three point two (3.2), for control it was two point five (2.5). This was realized by the sample farmer.

Table.1 Labour and cost utilization pattern in Turmeric production for One hectare

S. No.	Description	No. of workers	Unit Cost (Rs)	Total cost (Rs)
1	Land preparation	5	250	3000
2	Ploughing	10	250	4000
3	Sowing	10x2	250	5000
4	Mulch collection	12	250	3000
5	Weeding	5x2	250	10000
6	Harvesting	15	250	7000
6	Fertilizers and Micro Nutrient Mixtures -Powermix T			4500
7	Cleaning and grading	3x2	250	2500
8	Boiling	5x2	250	2500
9	Drying	2x3	250	1500
			Total	**43000**

Table.2 Cost Return structure in Turmeric cultivation

	Treated					Control				
Field	**Y/ha /q (dry)**	**Gross cost (Rs/Q)**	**Gross return (Rs/Q)**	**Net return (Rs/Q)**	**BCR**	**Y/ha/q (dry)**	**Gross cost(Rs/Q)**	**Gross return (Rs/Q)**	**Net return (Rs/Q)**	**BCR**
F1	54	42000	135000	93000	3.2	46	42000	101200	59200	2.4
F2	53	45000	132500	87500	2.9	45	43000	99000	56000	2.3
F3	50	42000	125000	83000	3.0	43	46000	94600	48600	2.1
F4	54	44000	135000	91000	3.1	46	39000	101200	62200	2.6
F5	53	43000	132500	89500	3.1	46	37000	101200	64200	2.7
F6	55	42000	137500	95500	3.3	45	36000	99000	63000	2.8
F7	54	44000	135000	91000	3.1	47	42000	103400	61400	2.5
F8	56	43000	140000	97000	3.3	46	41000	101200	60200	2.5
F9	57	43000	142500	99500	3.3	47	43000	103400	60400	2.4
F10	56	42000	140000	98000	3.3	47	38000	103400	65400	2.7
Average	**54.2**	**43000**	**135500**	**92500**	**3.2**	**45.8**	**40700**	**100760**	**60060**	**2.5**

Table.3 Yield returns in turmeric cultivation

Field	Treated	Control
	Y/ha/q (dry)	Y/ha/q (dry)
F1	54	46
F2	53	45
F3	50	43
F4	54	46
F5	53	46
F6	55	45
F7	54	47
F8	56	46
F9	57	47
F10	56	47

Table.4 Cost return structure in turmeric cultivation

	Treated	Control
Field	Net return (Rs/Q)	Net return (Rs/Q)
F1	93000	59200
F2	87500	56000
F3	83000	48600
F4	91000	62200
F5	89500	64200
F6	95500	63000
F7	91000	61400
F8	97000	60200
F9	99500	60400
F10	98000	65400

Table.5 Constrains faced by the turmeric cultivation in study area

S. No.	Constrains	Per cent
1.	Personal obligation with traders	20.7
2.	Financial weakness	68.4
3.	Lack of technical knowledge	78.6
4.	Lack of storage facility	46.2
5.	Low productivity	46.8
6.	Non availability of quality planting material	82.3
7.	Adequate market information	33.5

Fig.1 Cost return structure in turmeric cultivation

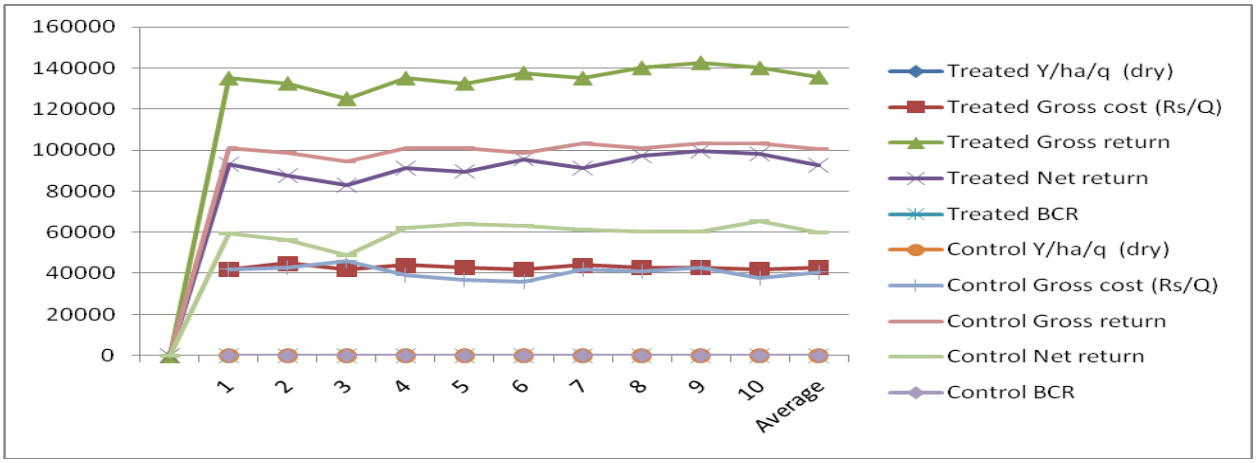


Fig.2 Yield returns in turmeric cultivation

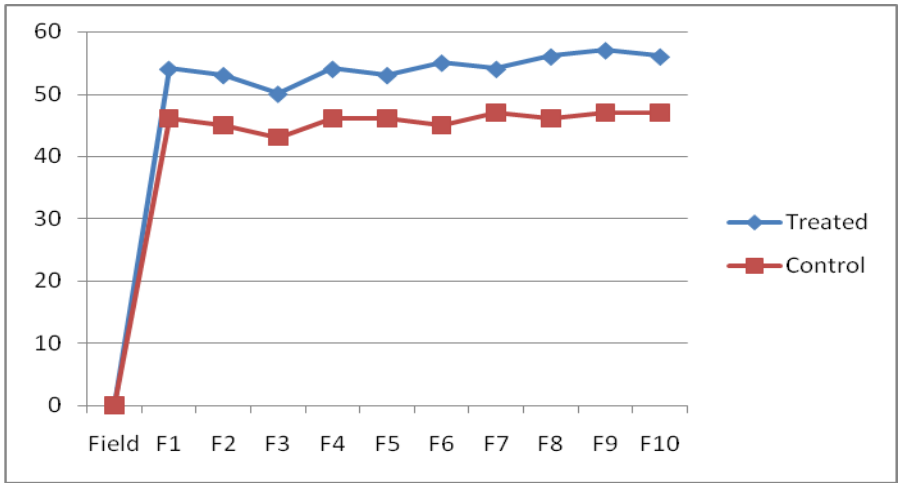


Fig.3 Cost Return structure in turmeric cultivation

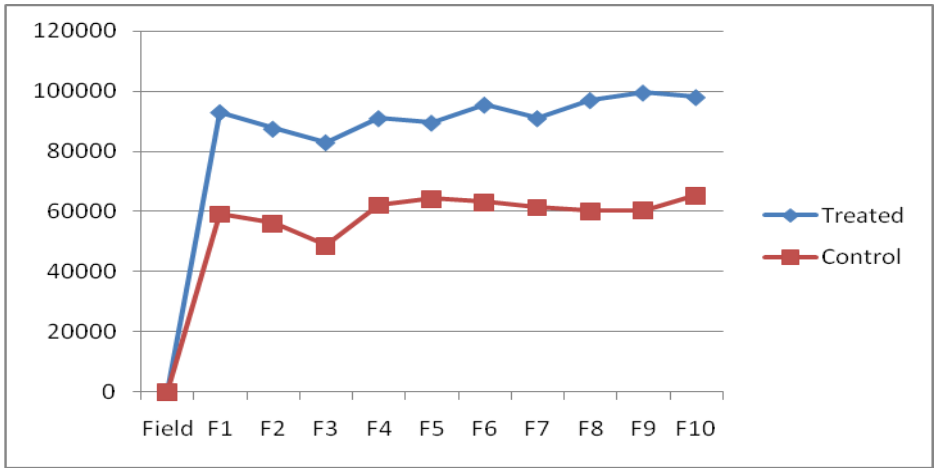
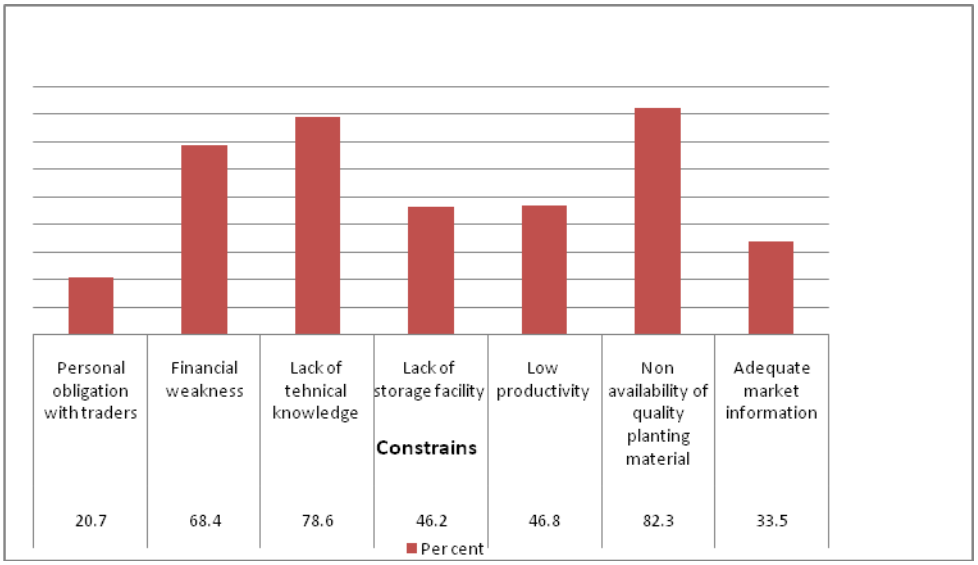


Fig.4 Constrains faced by the turmeric cultivation in study area4



The total cost of dried Turmeric production of the sample farmer was 54.2, concern with untreated it was 45.8q/ha. Similar results were obtained by the Deepa (2010), Umagowri (2011) in their study on cost of commercial production and seed production of cotton.

Constrains faced by the turmeric cultivation in study area

The major constrains faced face by the turmeric growers in cultivation of Turmeric in this study area presented in Table 3. The selective farmers faced and realized and the study revealed that the major problem faced by the growers in production are non-availability of good seed material in appropriate time, lack of technical knowledge, lack of knowledge on importance of micro nutrient, inadequate market information and low productivity.

Turmeric is one of the most important spice crop in or country. However the productivity is continuously decreasing year by year. There is need to increase the proclivity to fulfill the domestic requirement and for export turmeric cultivation is capital intensive and needs more investment. It has been observed that technological interventions like rhizome treatment, soil application of biocontrol agents, manures, fertilizers, Micro Nutrients, crop rotation, mulching and correct form of plant protection measures, increasing the yield performance by 20-25 per cent. To enhance the productivity, ecofriendly production technology among the farming community are the need of the hour.

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How to cite this article:

Dhanalakshmi, K., K. Chitra, R. Manimekalai, C. Balisasikumar and Karthikeyani Vijayakumari, K. 2018. Production and Economics of Turmeric Cultivation. *Int.J.Curr.Microbiol.App.Sci.* 7(11): 3496-3502. doi: https://doi.org/10.20546/ijcmas.2018.711.399