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## A STUDY ON COST AND RETURNS OF CURRY LEAF CULTIVATION IN COIMBATORE DISTRICT

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### ABSTRACT

*Cultivation of curry leaf in Coimbatore provides significant level of income to the farmers. The study aims to find the cost and returns of curry leaf production. The primary data required for the study were collected from the 239 selected respondents in Coimbatore district in order to analyse the cost and returns of curry leaf cultivation. Found that the average yield of curry leaf per acre, per year is 20 tonnes. The share of variable cost is about 89 percent of the total cost. The total cost of the cultivation for curry leaf was estimated at Rs.1, 66,460 in the study area and the net income was worked out to be Rs.1, 33,540. It was observed that the higher net income was obtained by the curry leaf farmers.*

**KEY WORDS:** Cost, Returns, Benefit Cost Return, IRR, and NPV.

### INTRODUCTION

India is popularly known as the “spice bowl of the world” for production of variety of spices with superior quality, taste and fragrance. Out of 109 spices listed by ISO, India produces as many as 75 in its various agro climatic regions. Spices and condiments which can be broadly classified in to six groups based upon the plants used namely rhizomes and root spices, bark spices, leaf spices, flower spices, fruit spices and seed spices. Among that curry leaf comes under leaf spices.

#### **Background and History of Curry Leaves (Murreya koenigii L. Spreng)**

Curry leaf (*Murreya koenigii* L. Spreng) is a perennial leafy vegetable. It belongs to the family of Rutaceae. The curry leaf tree is native to India,

Sri Lanka, Bangladesh and the Andaman Islands. Curry leaf is an aromatic pubescent shrub or small tree commonly known as curry leaf. It often forms undergrowth in forests throughout India and in Andaman Islands (Anon,1962). Curry leaf tree are naturalized in forests and wasteland throughout the Indian subcontinent except in the higher parts of the Himalayas. From the Ravi river in Pakistan its distribution extends to east towards Assam in India and Chittagong in Bangladesh, and southwards to Tamil Nadu in India. The plant also found in the Tarai region of Uttar Pradesh, India is now widely found in the hills of Uttaranchal, Sikkim, Bengal, Assam, Central India, Western Ghats, Tamil Nadu, Maharashtra, Karnataka and Kerala (Anon,1964; Chakravarti et al., 1964 & Krishna et al., 1948). It adorns every house hold of southern India

and also cultivated in Burma, Ceylon China, Australia and the Pacific Islands (Anon, 1962; Joseph and Peter, 1985).

Curry Leaf is grown in as many as all the states of India. In every part of south, the plant is grown in India. On commercial basis, it is best grown in Tamil Nadu leaf farms and many other as well. The curry leaves are considered as a minor crop of spices. 1.2 lakh kg of curry leaves were exported from India during the years 2014 and 2015. Before the arrival of monsoon in May, planting of curry leaves is done mostly in the southern part of India. For the period of 15 months harvesting of the leaves is done after planting and yield of 100 kg leaves can be obtained from a tree each year.

### **Curry Leaves Cultivation in Tamil Nadu**

Curry leaves are best grown in all parts of India but the major production of curry leaves and the exports of it are done in the Tamil Nadu states due to the presence of sufficient amount of climate conditions required for the growth of curry leaves. Other states include Utter Pradesh, Rajasthan and Southern part of India. The best season for the cultivation of the curry leaves is during the onset of summer season usually between the month of April and May. It is now cultivated in large farms in India. Such a farm is seen in around Mettupalayam in Tamil Nadu in India. Indian curry leaves are considered to be the best in the world due to its fine aroma and flavour especially one that cultivated in Coimbatore district. Karamadai, Periyanaikenpalayam are the highest producing of two blocks of curry leaves in the district. The highest area of production in Karamadai was 22638.10 Tonnes and in Periyanaikenpalayam it was 16265.93 Tonnes respectively.

Against the given background, the present study was undertaken to understand the production pattern, costs and returns of curry leaf growers in Coimbatore district.

### **REVIEW OF LITERATURE**

Rymbai, Singh et al. (2000)<sup>1</sup> analysed pine apple orchard in Meghalaya. They used benefit cost ratio. They found that this crop generate negative returns during the initial 2 years and start giving positive returns from third year onwards. Their study showed that the net returns in pine apple orchard increases with increase of size of orchards. The share in total cost was found to be increasing with the age of plants which needs more inputs with the increasing age. The benefit cost ratio analysis indicates that the investment in pine apple orchard is economically viable and on an average Rs. 1 investment brings Rs. 1.52 returns.

Ram Suresh et al. (2012)<sup>2</sup> analysed the economic production of the medical plants viz. menthol mint, Tulsi and Vetiver has worked out using farm level data. They used cost benefit ratio,

the net return over total cost have been found higher for Vetiver (Rs.1.5399/ha) followed by menthol mint (Rs.53.250/ha) and Tulsi (Rs.40.094/ha).The benefit cost ratio has been observed to be highest for menthol mint (3.27) followed by Tulsi (3.21) and Vetiver (3.04). The employment generated potential of these crops has also been found quite high.

Janalin and Tripathi (2014)<sup>3</sup> analysed the cost and returns of turmeric production. They found that the approximate yield of about 14.7q/ha of semi process (dried) turmeric. The share of variable cost is about 98% of the total cost. The total costs of Cultivation (cost c2) for the turmeric was estimated at 77,012/ha. Whereas the net income was worked out to be 6,475/ha for fresh turmeric and 28,109/ha for dried turmeric It was also observed that a higher net income obtained when the farmers disposed to avoid distress sale. They also found that lack of knowledge about pest management is the major constraint faced by farmers in turmeric production.

Karthik and Amarnath (2014)<sup>4</sup> estimated that the cost of cultivation of turmeric per hectare was Rs. 119873.75. The gross income was Rs. 127881.17 per ha. They found that the technical efficiency analysis indicated the importance of harvesting and curing and irrigation in turmeric cultivation. They also found that the positive value of NPV, BCR of greater than one and IRR of more than current bank rate revealed the financial feasibility of turmeric processing unit.

### **STATEMENT OF THE RESEARCH PROBLEM**

Based on the reviews done on the available past empirical studies it was observed that there were limited investigations and studies have conducted related to spices in general and there were hardly any studies related to this crop this was the main reason for conducting this study. Karamadai and Perianaikenpalayam blocks in Coimbatore district have emerged at the most popular for curry leaf production areas in Coimbatore district because of the best suited climate, soil, irrigation facilities, skill and intensive cultivation practices adopted by the farmers of this area. The present paper is an analysis of the cost of production, returns, benefit ratio and method of sale of curry leaf in Coimbatore.

### **OBJECTIVES OF THE STUDY**

The major objective of this study is to estimate the costs and returns of curry leaf cultivation in the study area.

### **MATERIALS AND METHODS**

Multi stage sampling technique was used for the selection of samples in the present study. Out of 32 districts, Coimbatore district was selected for the study purposively since it contributes maximum to the acreage and production of curry leaf. Out of twelve blocks in Coimbatore district Karamadai

and Periyanaikenpalayam were selected as they are largely known for highest acreage production (government of Tamil Nadu 2013-2014). Eight villages, belonging to Karamadai and Periyanaiken palayam Blocks were randomly selected and after obtaining farmers list from village administrative officer it was decided to select 25 percent of farmers randomly from each village. Thus the total came to 239 farmers and they were interviewed by using a well structured interview schedule to collect the data.

This study was based on primary as well as secondary data. The secondary data were collected from the VAO Office, Vadavalli, and Curry Leaf Growers Association. Primary data were collected with the help of a pre-tested interview schedule by face to face contact from the sample respondents. The information given was based on memory of the respondents. The on total land holdings, operational land on curry leaf, family size, educational level, cropping pattern, etc., were collected. The primary data from all the respondents were collected during the harvest period of 2014-2015.

**Costs: Total Costs (TC) Used in this study consists of Total Variable Cost (TVC) and Total Fixed Costs (TFC).**

#### **Total Variable Costs (TVC)**

This cost represents the sum of expenditure in the short-run i.e., cost incurred in one cropping season on variable inputs for any level of output. Total variable inputs for level of output. variable costs (TVC) comprised of costs incurred on variable inputs such as main field preparation, Fertilizer, plant protection, Intercultural operation, Irrigation, Harvesting and interest on working capital.

#### **Main Field Preparation**

Ploughing cost, Bed preparation cost, forming ridges cost and plantings or seed cost including labour. Farm yard manure (FYM) the value of FYM used was calculated by considering the average rates prevailing in the area during planting.

#### **Chemical Fertilizer**

The cost incurred on chemical fertilizer along with the transportation charges, including labour was taken for calculation.

#### **Plant Protection**

The actual expense incurred on plant protection chemicals, including labour charges was considered.

#### **Intercultural Operation**

The actual expense incurred on intercultural operation is the expense of labour for weeding, mulching and earthing up was considered.

#### **Irrigation**

The actual expense incurred on irrigation, including labour was considered.

#### **Harvesting**

The labour expense incurred on harvesting was considered.

#### **Interest on Working Capital**

This value was calculated at the rate of 12percent for the duration of crop, on the total value of the planting material, farm yard manure, chemical fertilizer, plant protection, and human labour.

#### **ii) Total fixed Costs (TFC)**

Total fixed costs are long-run costs which are incurred over a period of time or years irrespective of output level. The fixed costs include depreciation on farm implement and machinery, interest on fixed capital, rent paid for leased-in land land revenue and other taxes and imported rented value of land.

#### **Land Revenue**

Land revenue was taken as zero, as no revenue was paid by the farmers.

#### **Depreciation Charges**

Depreciation falls in value of a given asset as a result of its use, wear and tear, accidental damage and time obsolescence. It involves prorating the original cost of asset over its useful life (John and Kapur 2001).

#### **Imputed Rental Value of Owned Land**

The rental value of the land was calculated at the rate of 10000/acre as per estimation.

#### **Interest on Fixed Capital**

This was calculated at the rate of 10 percent on the total value of the imputed rental value of the owned land, rent paid for leased-in land and depreciation.

#### **Costs and Returns of Curry Leaf Cultivation**

In order to continue the curry leaf cultivation, it must be remunerative to the farmers. Who largely depend this as a main source of income.

An attempt was made to work out the cost and returns involved in curry leaf cultivation. The details of cost and returns are presented in the table below.

### **RESULTS AND DISCUSSION**

It could be observed from the table – 1, that the total cost of production (in acres) of the curry leaf worked out to Rs. 1,66,460 per acre, among the variable costs maximum of 22.82 percent is shared by the item weeding and mulching followed by pesticides 21.92 percent, fertiliser 18.02 percent, harvesting 12 percent, and irrigation 3.60 percent respectively. However, the minimum cost of 1.82 percent is accounted by the main field preparation of saplings and plantings because it was a onetime investment. It could also be obtained that the total cost worked out to Rs.16940 (10.21 %) of the total cost. The cost of production of Curry leaf per Kg was just above Rs.8.

## Costs

**Table - 1: Estimated Annual Average Costs per Acre in Curry Leaf Cultivation**

|           | Particulars   | Cost per Acre in Rs. | Percentage      |
|-----------|---|----------------------|-----------------|
| I         | <b>Variable Cost</b>  |                      |                 |
| 1.        | Main field preparation Including planting and saplings          | 3000                 | (01.80)         |
| 2.        | Fertilizer application  | 30000                | (18.02)         |
| 3.        | Plan protection   | 36500                | (21.92)         |
| 4.        | Inter cultural operation Including weeding and mulching         | 38000                | (22.82)         |
| 5.        | Irrigation  | 6000                 | (03.60)         |
| 6.        | Harvesting  | 20000                | (12.01)         |
| 7.        | Interest on working capital                                     | 16020                | (09.62)         |
| <b>8</b>  | <b>Total Variable Cost (TVC)</b>                                | <b>149520</b>        | <b>(89.79)</b>  |
| II        | <b>Fixed Cost</b>   |                      |                 |
| 1.        | Imputed rental value on owned land                              | 10000                | (06.00)         |
| 2.        | Depreciation  | 5400                 | (03.29)         |
| 3.        | Interest on fixed capital                                       | 1540                 | (00.92)         |
| <b>4.</b> | <b>Total fixed cost (TFC)</b>                                   | <b>16940</b>         | <b>(10.21)</b>  |
| III       | <b>Total cost of (TVC + TFC)</b>                                | <b>166460</b>        | <b>(100.00)</b> |
| IV        | <b>Total Cost of Production of Curry Leaf Per Kg (AC= TC/Q)</b> |                      |                 |
|           | $= \frac{166460(Rs.)}{20000(Kgs)} = 08.323$ in rupees           |                      |                 |

Source: Primary Data.

## Returns

The details of returns on production of curry leaf cultivation in the study area is worked out and presented in the table - 2.

**Table-2: Annual Average Returns per Acre in Curry Leaf Cultivation**

| particulars | Units in Tonnes | Price per kg | Output Kg/ac per year | Amount in Rs. |
|-------------|-----------------|--------------|-----------------------|---------------|
| 2014-2015   | 20              | 15           | 20000                 | 300000        |

Source: Primary Data.

The average the production of curry leaf per acre is five tonnes for one cutting and there are four cuttings per annum in one acre hence the total production was 20,000 tonnes per annum in one acre on an average. The cuttings are done at an interval of once in three months, the average price paid to one ton was Rs.15000. Thus, the total return was worked out as Rs. 3, 00,000 per annum from an acre of curry leaf cultivation. Cost of production per kg of curry leaf was Rs. 166640 the net return (TR – TC = Π) in a acre was worked as Rs. 133540, thus a farmer got a profit of rupees seven

per kg. Therefore curry leaf cultivation seems to be very attractive to the farmers in this region.

## FINDINGS AND SUGGESTIONS

- Found that the average yield of curry leaf per acre, per year is 20 tonnes. The share of variable cost is about 89 percent of the total cost.
- The total cost of the cultivation for curry leaf was estimated at Rs.1, 66,460 in the study area and the net income was worked out to be Rs.1, 33,540.
- It was observed that the higher net income was obtained by the curry leaf farmers

- The output of curry leaf much depends upon the maintenance of curry leaf plants. The timely application of water, manure, pesticides and fertilizers are required for higher output. Weeding is important maintenance.
- The cost of the fertilizers and pesticides is more as the farmer buy them from private traders. The Government should come forward to supply them through agricultural co-operative organisations either as subsidies or at reasonable price.
- The official of the horticultural department of the taluk levels should visit the farms and give their suggestions to the problem regarding the availability of hybrid saplings, pest management, and water management, use of manures and fertilisers and increased production.

### CONCLUSION

The Findings obtained from the study of the costs and returns from curry leaf production revealed that the cost of intercultural operation i.e., weeding and mulching and application of fertilizer and pesticide are seems to be very high.

The government should give financial support to farmers and take steps to reduce middleman interference. Co-operative marketing could solve extent and they could also act as agents of regulated market. The government should take an active role not only in disseminating farm technologies but also import knowledge of entrepreneurship to help the farmer find out their way in difficult circumstances.

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