



COST OF CULTIVATION AND PROFITABILITY OF MANGO CULTIVATION IN DHARMAPURI DISTRICT, TAMIL NADU

Vasuki. R¹, M. Soundariyan².

Assistant Professor, Department of Agricultural Economics¹; Assistant Professor,
Department of Agricultural Economics¹; Roever Agricultural College (TRIARD), Perambalur,
Tamil Nadu, India^{1,2}

Article DOI: <https://doi.org/10.36713/epra11806>

DOI No: 10.36713/epra11806

ABSTRACT

India is the top most mango producer in the world and Tamil Nadu provides the major contribution. The present study was conducted to analyze the cost, returns and profitability of Mango orchards in Dharmapuri district of Tamil Nadu. The study was carried out in Dharmapuri district with a sample size of 120 with the objective of cost of production and profitability of mango orchard. The average yield per acre of Mango orchard with different age groups was 23.08 tonnes. The average net returns from the Mango orchard were Rs.229492.50. This study found the per acre establishment and maintenance cost of mango orchard was Rs. 23950. The profitability analysis revealed the Benefit Cost Ratio (BCR) @15% discount rate was 1.98. It shows the economic feasibility of Mango orchard.

KEY WORDS: Mango, cost of cultivation, profitability, yield and Economics.

INTRODUCTION

Mango is decidedly the most popular fruit in the world and has been rightly described as “King of Fruits”. India is the biggest mango producer in the world, accounting for about 52 per cent of world production after China. It has the status of being the national fruit of India, Pakistan, Philippines and National tree of Bangladesh. The important mango producing states in India are Andhra Pradesh, Uttar Pradesh, Karnataka, Bihar, Gujarat, Maharashtra, Tamil Nadu, West Bengal, Kerala and Orissa. It has been proven that the horticulture crops for which the Indian topography and agro- climatic conditions is well suited could be an ideal choice for achieving sustainability by small farmers with continued Governmental support. Different States in India are showing different level of productivity in respect of fruits and mango in particular. Fresh mangoes and mango pulp are the important items of agri-exports from India. India's main export destinations for mango are UAE, Bangladesh, UK, Saudi Arabia, Nepal, Kuwait, USA and other Middle East countries with a limited quantity being shipped to European market. The production of mango is low input intensive as compared to food grain that means fewer requirements of resources and it is more profitable venture for resource-poor farmers that used to get considerable income and create employments for both male and female especially in rural areas through cultivation, processing and marketing

OBJECTIVES OF THE STUDY

- To identify cost of cultivation of mango in study area.

MATERIALS AND METHODS

This study focused only on mango growers in Dharmapuri District in Tamil Nadu. The present study is based on both primary and secondary data. The Primary data were collected from Mango growers of Dharmapuri district with the help of an interview schedule. Secondary data were collected from various journals, books and from various websites.

The researcher has adopted for the present study multi- stage random sampling with Dharmapuri district as the universe, the village as the primary unit of sampling.

SCOPE OF THE STUDY

The analysis on the cost of cultivation of mango in Dharmapuri district will give a better understanding on the existing status of mango production which will serve as an eye opener for the planners and researchers



working in this field. This will provide basic guidelines for the policy makers for fixing the ceiling of Minimum support price.

COST OF CULTIVATION

To work out the cost of cultivation, Standard cost concepts were used which includes Cost A1, cost A2, cost B1, cost B2, cost C1, cost C2, cost C3.

Cost A1: It consists of all actual expenses in cash and kind incurred in production by the owner operator. It includes cost of hired human labour, cost of manures and fertilizers, cost of plant protection chemicals, irrigation cost, interest on working capital, land revenue and depreciation of fixed capital.

Cost A2: Cost A1 plus rent paid for leased in land.

Cost B: Cost A2 plus imputed rental value of owned land.

Cost C: Cost B plus imputed value of family labour.

RETURNS

Gross Returns: Gross return was obtained by arriving at the total value of Mango, valued at harvest price in the reference period.

Gross returns = value of main product

Net Returns: The Net returns were computed by subtracting the total cost from the gross income.

Net Returns = Gross returns- Cost of Cultivation

COST OF PRODUCTION PER UNIT

Cost of production per tonne of Mango was arrived at by dividing the net cost of cultivation per acre by the total per acre yield of Mango in tonne.

BENEFIT COST RATIO

Benefit cost ratio was obtained by dividing the gross income by the total cost of production per acre.

COST OF ESTABLISHMENT OF MANGO ORCHARD

The preparing costs incurred in the establishment of mango crop up to bearing stage formed the establishment cost. The establishment included all the costs incurred from the initial establishment i.e., seed material and planting, fencing, gap filling up to the stage of bearing, i.e., 5th and 6th year. The total establishment cost included that of initial establishment, plus plant protection, fertilizer and manures, human labour, tillage, watch and ward, land tax up to the stage of bearing and repair and up of farm implements. The Implement cost for five years was accordingly estimated at the prevailing prices of inputs during the period under the study.

The cost of establishment of mango in Dharmapuri district is presented in Table1. Total establishment cost of mango orchard per acre for five year was found to be Rs. 27150 and the net establishment cost orchard per acre was arrived Rs 23950 after deducting the income from inter crop at Rs 23950. The break –up details of costs are given in the table1.

Table: 1 Cost Establishment for Mango Orchard per Acre

Sl. No	Cost components	Dharmapuri district	
		In Rs.	Per cent
1.	Initial Establishment		
	i)Seed material and planting	2800.00	10.31
	ii)Gap filling	400.00	1.47
	iii)Fencing	1000.00	3.68
	iv)Fertilizer and manures	2400.00	8.83
	v)Human labour	3600.00	13.25
	vi)Bullock labour	3100.00	11.41
	vii)Watch and ward	1000.00	3.68
	viii)Rental value and land tax	12350.00	45.48
	ix)Receipt and upkeep of farm implements	500.00	1.81
	Total establishment charges (i to x)	27150.00	100
2.	Income from intercrop	3200.00	
3.	Net establishment cost (8-9)	23950.00	

It could be seen from the table1 that rental value of land accounted the sum share of 45.48 per cent followed that human labour accounted 13.25 per cent and bullock labour and seed material accounted 11.41per cent and 10.31per cent respectively.



Mango being a perennial crop. Its life time extends over a period of 50 years. Hence the annual share of establishment cost was worked out based on the assessment that the life time of mango as 50 years and it was Rs 479/year. The annual share of cost of establishment in the total cost of production was Rs 479.00.

COST OF PRODUCTION OF MANGO

Estimation of cost of production of mango is a vital part to study the economic analysis of mango, so to work out cost of production, Establishment cost and operation and maintenance cost were collected from the sample farms and presented in table2.

Table :2 Establishment and Maintenance Cost for Mango Orchard (Per acre)

Sl. No	Cost components	6-10 years	11-20 years	Above 21 years	Average	Per cent (%)
		In Rs	In Rs	In Rs		
I	Annual Fixed Cost of Orchard Establishment					
1.	Annual share of establishment cost	27087.91	27087.91	27087.91	27087.91	28.92
2.	Depreciation	2300	2300	2300	2300	2.56
3.	Interest on fixed capital	31581.25	31581.25	31581.25	31581.25	33.71
4.	Interest on working capital	3375	3516	3621	3504	3.74
	Sub Total I	64344.16	64486.16	64592.16	64574.14	68.83
II	Operation Cost and Maintenance Cost					
1.	Human labour	5500	6175	7075	6250	6.67
2.	Bullock labour	3500	4125	4600	4075	4.35
3.	Plant protection	6625	7000	8000	7208.33	7.70
4.	Watch and ward	2000	2000	2000	2000	2.14
5.	Irrigation charges	4500	4000	2500	3666.67	3.91
6.	Farm yard manure	6000	6000	6000	6000	6.41
	Sub Total II	28125	29300	30175	29200	39.17
III	Cost of cultivation (I+II)	92469.16	92786.16	94767.16	936741.16	100
	Yield (in tonnes)	17.75	24	27.5	23.08	
	Price (in tonnes)	14000	14000	14000		
IV	Returns (in Rs)	248500	336000	385000	323166.7	
V	Net Returns (in Rs) (IV-III)	156030.84	242213.84	290232.84	229492.5	
VI	Cost of Production /tonnes	5209.53	3907.75	3446.07	4187.78	

It could be evident that the operation cost accounted for 31.17 per cent for average sample farms in study area. It showed that the cost of cultivation of mango decreases when age of trees increases, the average yield of mango was 17.75 tonnes in 6 to 10 years age of crops and 24 tonnes in 11- 20 years age of crops and 27.5 tonnes in above 21 years age of crops. Of this plant production yields net returns with a Rs. 156030.84 in 6 to 10 years age of crop and Rs.242213.84 in 11- 20 years age of crop and Rs. 290232.84 in Above 21 years age of crops.

The study found that cost of production of mango per tonne was low (Rs. 9087) in 11-20 years age group orchard where as it was higher in 6-10 around (Rs.10092/ tonne) and above 20 years around (Rs 10553/tonne)

BENEFIT-COST RATIO (B-C RATIO)

Benefit- cost ratio was used to measure returns per rupee of investment in mango cultivation. The estimated benefit cost ratio was 1.98 indicating that an investment of Re. 1 would generate an income of Rs. 1.98 in mango cultivation. The analysis shows that mango cultivation is economically viable in the study area.



Table: 3 Economic Feasibility Analysis of Mango Cultivation

Sl. No	Particulars	Dharmapuri District
1	BCR at 15%	1.98

CONCLUSION

The present study revealed that average yield of mango in Dharmapuri region was found to be 23.08 tonnes per acre and farm harvest price per tonnes received by mango growers was Rs. 14000. The average gross income per acre was Rs.323166.70 on sample farms. It could be observed from Benefit cost ratio, it clearly indicates that investment on mango orchard was found remunerative (1:1.98) in the study area. For the further growth in the income of the mango growers in Dharmapuri district, the study suggests that there is a need of adoption of improved technologies along with proper utilization of farm resources.

REFERENCES

1. Bhosale SS, Sonawank KG and VA Shinde. 2016. Economics of Kesar mango production in plain zone of western Maharashtra. *International Journal of Agriculture Sciences* 8(45): 1912-1915.
2. Choudhry MM, Silva T and CT Silva. 2001. Mango market: Actual situation and prospects. *Comunicado-Tecnico-da-Embrapa-Semi-Arido* 97: 8.
3. Matin MA, Baset MA, Alam QM, Karimand MR and MR Hasan. 2008. Mango marketing system in selected areas of Bangladesh. *Bangladesh Jr. Agril. Research* 33(3): 427-438.
4. Ramani M, Tarpara VD, Swaminathan B, Mansai P, and NM Pokiya. 2019. Cost of cultivation and profitability of Kesar mango cultivation in Saurashtra region of Gujarat, India. *International Journal of Science, Environment and Technology* 8(6): 1153-1160.
5. Santhakumar, S and Ravichandran, S.(2021). Cost of Production and Profitability Analysis on Mango Orchards in Krishnagiri District of Tamil Nadu. *Research Journal of Agricultural Sciences: An International Journal*. 12(3),769-773.
6. Vijayalakshmi, P and Periyasami, G. (2020). A study on cultivation and marketing of mango with special reference to krishnagiri district in Tamil Nadu. *Journal of Xi'an University of Architecture & Technology*. 12(3),1315-1320.