PROJECT REPORT ON

MANGO CULTIVATION

SUBMITTED BY:

Prasad
Pune
Mobile No.:9890227927

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C O N T E N T S

CHAPTER - I

HIGHLIGHTS OF THE PROJECT REPORT

A. ABOUT THE PROMOTER

PARTICULARS	ABOUT THE PROMOTER
1. Name	: Prasad
2. Address(Residence)	: Pune
3. ContactNumber	: 9890227927
4. DateofBirth	:
5. EducationalQualification	: Agri MSC
6. ProjectLocation(Addr.)	: Maharashtra
7. Constitution	: Proprietorship
8. Experience	: Eight Years

B. PROJECT PROFILE (FINANCIAL)

PARAMETERS		VALUES
1. Mango Variety		: Kesar
2. Area in acre		: 5
3. Product		: Mango Fruits
4. Cost of the project		: 888,000
5. Bank Loan		: 666,000
6. Margin Money		: 222,000
7. Financial Indicators		
	BCR at 15% DF	: 1.55:1
	NPW 15% DF(Rs.)	: 704,848
	IRR %	: 40.17
	DSCR	: 7.3
8. Interest Rate(% per annum)		: 12
9. Repayment		: 5 years

CHAPTER - II

PROJECT DESCRIPTION

Introduction

Mango (Mangifera indica L.) is the most important commercially grown fruit crop of the country. It is called the king of fruits. India has the richest collection of mango cultivars. India ranks first among world's mango producing countries accounting for about 50% of the world's mango production. The fruit is very popular with the masses due to its wide range of adaptability, high nutritive value, richness in variety, delicious taste and excellent flavour.

Production Technology

The success of commercial Mango orchard is depend, among other things, on the adoption of innovative technology for both production and post harvest management. Salient features of the technological innovations that might be followed are outlined below.

Selection of Location

Establishment of mango orchard is a long-term investment and trees continue to produce fruit for longer years. Hence its planting requires proper planning which includes careful selection of site. The land which is chosen for mango orchard is near to main road and market. It has proper irrigation facilities and has a good soil and climate suitable for growth and production of mango trees.

Unit Size

Economic size of the project start from 1 acre which produces sizeable quantity of fruits necessary for regular supply to domestic market.

Field Preparation and Layout

• Selected fields should be deeply ploughed followed by harrowing to root out the perennial weeds and heavy clods.

• This operation provides congenial tilth to young roots for their healthy development.

• Proper levelling of land follows this and a gentle slope is provided in one direction to facilitate irrigation as well as drainage of excess water during rains.

• The soils which have drainage problems, should be provided with adequate trenching from the very beginning to avoid serious damage to young plants due to water stagnation.

• After the proper field preparation one should move for layout.

• Proper layout of an orchard is necessary.

• Like selection of site, any mistake committed in beginning cannot be rectified later on.

• Therefore very careful pre-planning is essential before the actual layout in the field.

• The system of layout to be adopted is decided according to needs.

Planting Distance

• The main purpose of planning of layout of an orchard is to provide adequate space to the plant for normal development to permit proper intercultural operation and easy passage of air and sunlight for the maintenance or orchard sanitation.

• The planting distance depends on various factors like nature of soil, type of plant weather grafted or seedling and variety.

• In poor soils plants make slow growth, so require less space while in heavy soils growth of plants remain dwarf sized.

• Planting distance depends on vigour of the cultivar.

Wind Breaks

• Before planting of mango orchard, it is essential to reserve some place for planting of wind breaks at the border sides of orchard from which hot and high winds and frost are expected.

Digging and Filling of Pits

• The pit size would be 1X1X1m dimension.

• Before filling the pit, a mixture of well - decomposed FYM (50 kg), superphosphate (100 gm), murate of potash (100 gm) and fenvulrate dust (250g) is prepared and mixed with upper as well as lower soil of the pit.

• The mixture of upper soil is filled first followed by lower soil mixture.

• During filling of pits soil is pressed well so that there is no air pocket inside the pit.

• The upper level of pit is kept 15cm above from the field level.

• After filling, the pits are irrigated to settle down the soil of the pit.

Time of Planting

• Mango planting is done during rainy season (July to August) and spring season (February to March) in North India.

Selection of Grafts for Planting

• Mango grafts of desired cultivar are procured from genuine sources as in the long run the performance of the orchad depends on the quality of the plants particularly on the pedigree of the tree, their health and vigour. Normally, sturdy grafts with smooth union having equal thickness of rootstock and scion give good performance in the field and such type of grafts are preferred over weak one.

• Six-month to one year old grafts having upright scion growth with 3-4 scion branches are desirable for planting as compared to scion having too many branches.

Fertilization

• Fertilizers may be applied in two split doses , one half immediately after the harvesting of fruits in June/July and the other half in October, in both young and old orchards followed by irrigation if there are no rains. Foliar application of 3 % urea in sandy soils is recommended before flowering. Well decomposed farm-yard manure may be applied every year. For trench application of fertilizers, 400g. each of N and K_2O and 200g. of P_2O_5 per plant should be provided. Micro-nutrients may be applied as per the requirement in the form of foliar sprays.

Irrigation system

• The frequency and amount of irrigation to be provided depends on the type of soil, prevailing climatic conditions, rainfall and its distribution and lastly the age of the trees. No irrigation is required during the monsoon months unless there are long spells of drought. Irrigation should be given at 50% field capacity.

Harvest and post harvest management

• The orchard starts bearing from sixth year onwards and the economic life of a mango tree exceeds 35 years. Yield of fruits varies considerably according to the variety, climatic conditions, plant population etc. On an average, the yield ranges from 5 to 9 t/acre. Grafted plants start bearing early.

• Grading is mainly based on the size, colour and maturity of the fruits. While grading, smaller fruits are separated from the larger ones in order to achieve uniform ripening. Immature, overripe, damaged and diseased fruits are discarded in the process of grading. The fruits are generally harvested early in the season at a pre-mature stage to capture early market. Such fruits are ripened by uniformly dipping in 750 ppm. ethrel (1.8ml./l.) in hot water at 52±20 C for 5 minutes. within 4-8 days under ambient conditions. Mature fruits are ripened with lower doses of ethrel for uniform colour development.

• The mature green fruits can be stored at room temperature for about 4-10 days depending upon the variety. The harvested fruits are pre-cooled to 10-120 C and then stored at an appropriate temperature. Wooden or cardboard boxes, rectangular in shape and bamboo baskets having capacity to accommodate 5 to 8kg. of fruit is used for packaging and transportation of mango fruits. The most commonly used containers are ventilated card board boxes of corrugated fibre board (CFB) cartons. Size of the box varies to accommodate 5 to 10 kg. of fruit.

• Road transport by trucks is the most popular mode of transport due to easy approach from orchards to the market. Marketing of the produce is mainly controlled by intermediaries like wholesalers and commission agents.

CHAPTER - III

MARKET POTENTIAL

Mangoes account for approximately half of all tropical fruits produced worldwide. India is the largest mango producer, accounting for about half of the global mango production. Indian Mangoes are known for their taste and aroma throughout the world. Entire produce of mango is marketed as fresh fruit and only a limited quantity is given postharvest treatment for export purposes. Less than five per cent of the produced mangoes are processed and mango pulp is the main export product both in terms of volume and value

Distribution is an extremely important phase in the marketing of mangoes. The fruit after harvest has to pass through several agencies before reaching the consumer. Producers do not generally undertake wholesale distribution of mangoes, as it is a common practice to lease out the orchards to pre-harvest contractors-who take care of watch and ward of the crop till maturity and then dispose of the produce as it suits them. Small numbers of producers have direct dealings with the consumers or sell their produce through the commission agents.

The retail distribution is done by growers, contractors, commission agents and wholesalers, stall-holders, shop-keepers and hawkers in varying degrees. To ensure better returns to the growers, and fruits at cheaper rates to the consumers, formation of fruit grower's co-operative sale societies deserves encouragement.

Mango prices vary a great deal from year to year, depending upon each year's total production and various other factors like prevailing prices, demand, transport and marketing facilities. Wholesale prices of mangoes also vary considerably, depending upon the supply and demand of particular varieties, periods of availability, weather conditions, transport facilities, variety, quality, etc. Ordinarily, however, the prices are high at the commencement of the season, declining gradually as the supplies increase. Later on, when the arrivals decrease, they tend to recovery and reach a high level again before the close of the season.

The demand of fresh mango fruits and processed food items in international and domestic market has shown a decent increase. This estimation is creating a necessity for growing more and more mango fruits to cater the growing demand of domestic & international market.

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CHAPTER - V

SWOT ANALYSIS

Strengths:

• High returns from the crop compared to traditional food crops.

• The soil and climatic situation in the Indian regions are very suitable for production of mango.

• There are many established nurseries with supplies good quality saplings of Mango.

• The Governments are providing strong support to commercial cultivation of fruit crops through various policies and schemes.

• The mango industry is providing livelihood opportunities to its growers and those involved in its marketing channel.

Opportunities:

• With scarcity of agricultural labor and increasing rural road network, more and more commercial oriented farmers are being attracted to go for development of mango orchards.

• Marketing channel for supply from production to the terminal market centers is developing.

• Mango has an established export market and poses bright opportunities for export in the international market whether in fresh or processed forms.

• There is scope to establish mango preservation factories in cooperative sector. This will add income through processing and create additional employment opportunities for the rural people.

• Various cultivars of improved mangoes were developed by research.

Weakness

• The orchard owner farmers do not give required attention and care in using required inputs and adopting improved cultural practices in their mango orchards, except using some insecticides to protect the fruits from insects. Most farmers lack technical knowledge and training in development of commercial mango orchards.

• There is unavailability of expert technical guidance available to the farmers in addressing production related issues which demand immediate attention (like insect damage, pests, etc).

• Poor post-harvest management infrastructure. Due to the perishable nature of the products it’s important to have enough transportation and good logistics facilities.

• Lack of effective farmers’ organization for initiating collective/group marketing.

• There is need for developing processing industries as there are higher post harvest losses in handling and marketing.

• Smaller land holdings limiting the scope for adoption of intensive crop production

Threats

• In recent years, insects attack on plant and fruit is reported which are not responding to chemicals being used, this is posing great threat to sustainability of the crop in the long run.

• Untimely rains and severe winter cause an extensive damage to the crop during its flowering season.

CHAPTER - V

ECONOMICS OF THE PROJECT

A. BASIS & PRESUMPTIONS

PARTICULAR	UNIT	QUANTITY
I. Techno-economics parameters		
Name of Variety		Kesar
Plant Density		Normal (spacing 10m * 10m)
Total no of plants per acre		40
Playback period	5 years plus moratorium for the 3 year	
Rate of Interest	%	12
II. Expenditure norms		
Land Levelling	Rs.per acre	5,000
Fencing & Gate	per running sq.ft.	40
Planting Material	Rs/seedling	40
Manures & fertilizers	Rs/acre	5,000
Insecticides & pesticides	Rs/acre	5,000
Farm Implements	Rs/acre	10,000
Manpower	Rs/acre	10,000
Cost of Tractor	Rs.	0
III. Income Norms		
Sale price of Mango fruits	tonn	50,000
Yield per acre after 4th year	tonn	7

B. TOTAL COST OF PROJECT

PARTICULAR	UNIT	UNIT RATE	QUANTITY	AMOUNT
I. Capital Cost				
1. Land				Own
2. Land Development				
Soil Levelling & digging	per acre	5,000	5	25,000
Fencing & gate	running sq.ft	40	2,000	80,000
				105,000
3. Irrigation				
Tube Well				125,000
Elecric pump % electrification				50,000
Pipeline				25,000
WaterStorage tank				50,000
				250,000
4. Cost of Drip Irrigation	per acre	25,000	5	125,000
				125,000
5. Infrastucture				
Labour room & godown	sq.ft.	1,500	100	150,000
Farm implements/Power tiller	Ls.	10,000	5	50,000
Tractor				0
				200,000
			Total Capital Cost	**680,000**
II. Working Capital				
(Cultivation cost in the first year is a part of the project Cost and in 2nd & 3rd year will be financed from intercropping revenue.)				
1. Cost of planting material	Nos.	40	200	8,000
2. Mannures & Fertilizers	acre	5,000	5	25,000
3. Insectisides & Pesticides	acre	5,000	5	25,000
4. Manpower(For Land etc.)	acre	10,000	5	50,000
5. Overhead(Electricity, Water etc)	acr	5,000	5	25,000

6. Intercropping cost	acre	10,000	5	50,000
7. Contengencies	acre	5,000	5	25,000
				208,000
TOTAL COST OF PROJECT				**888,000**

C. MEANS OF FINANCE

PARTICULARS	UNIT	UNIT RATE	AMOUNT Rs.
Term loan	%	75	666,000
Own Contribution	%	25	222,000
		TOTAL	**888,000**

D. PROJECTED PROFITABILITY

PARTICULARS	UNIT	UNIT RATE	QUANTITY	I YEAR	II YEAR	III YEAR	IV YEAR	V-VIII YEAR
Income								
Production Capacity	%			0	0	0	50	90
a. Sales of Units	Ton	50,000	35	-	-	-	875,000	1,575,000
b. Income from Intercropping	acre	35,000	5	175,000	175,000	175,000	175,000	-
			TOTAL	**175,000**	**175,000**	**175,000**	**1,050,000**	**1,575,000**
Expenditure								
a. Cost of Planting material	Nos.	40	200	8,000	2,000	-	-	-
b. Mannures and Fertilisers	acre	5,000	5	35,000	25,000	25,000	25,000	25,000
c. Insectisides and Pesticides	acre	5,000	5	25,000	25,000	25,000	25,000	25,000
d. Manpower(For Land Preparation)	acre	10,000	5	60,000	50,000	50,000	50,000	50,000
e. Packaging,Transportation	acre						15,000	25,000
f. Overhead(Electricity, Water)	acre	5,000	5	25,000	25,000	25,000	25,000	25,000
g. Intercropping cost	acre	10,000	5	50,000	50,000	50,000	50,000	-
h. Contengencies	acre	5,000	25,000	25,000	25,000	25,000	25,000	25,000
			TOTAL	**228,000**	**200,000**	**200,000**	**215,000**	**175,000**
Net Income				**-53,000**	**-25,000**	**-25,000**	**835,000**	**1,400,000**

E. FINANCIAL ANALYSIS

PARTICULAR	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR
Capital Costs	680,000				
Recurring Costs	228,000	200,000	200,000	215,000	175,000
TOTAL COST	**175,000**	**200,000**	**200,000**	**215,000**	**175,000**
Benefit	1,050,000	1,575,000	1,575,000	1,575,000	1,575,000
Depreciated Value of Building,					87,825
Fencing, borewell etc 10%					
Depreciated Value of Equipments@15%					216,392
Closing Stock value 10% Depreciation					100,000
TOTAL BENEFIT	**1,050,000**	**1,575,000**	**1,575,000**	**1,575,000**	**1,979,217**
NET BENEFIT	**-733,000**	**-25,000**	**-25,000**	**835,000**	**1,804,217**
Discounting Factor@15%	0.87	0.76	0.66	0.57	0.5
NPV Cost at 15% DF	789,960	152,000	132,000	122,550	87,500
NPV Benefits at 15% DF	152,250	133,000	115,500	598,500	989,609
NPW at 15% DF	**704848**				
BCR at 15% DF	**1.55:1**				
IRR%	**40.17**				

F. TERM LOAN REPAYMENT

Rate of interst - % per annum : 12

Opening balance of term loan : 666,000

Year	Loan Outstanding	Gross Surplus	Principal	Interest	Total Repayment	Net Surplus	DSCR
1	666,000	-	-	79,920	79,920	-	-
2	666,000	-	-	79,920	79,920	-	-
3	666,000	-	-	79,920	79,920	-	-
4	666,000	835,000	133,200	79,920	213,120	621,880	3.9
5	532,800	1,400,000	133,200	63,936	197,136	1,202,864	7.1
6	399,600	1,400,000	133,200	47,952	181,152	1,218,848	8
7	266,400	1,400,000	133,200	31,968	165,168	1,234,832	9
8	133,200	1,400,000	133,200	15,984	149,184	1,250,816	9
					Average DSCR		**7.3**