PROJECT REPORT ON

BROCCOLI CULTIVATION

SUBMITTED BY

Promoter Name:
xxxxxxxxxxxxxxx

Project Location:
xxxxxxxxxxxxxxxx

Prepared By:
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C O N T E N T S

CHAPTER - I

ABOUT THE PROMOTER

1. Name of Promoter	:xxxxxxxxx
2. Address (residential)	:xxxxxxxxx
3. Contact Number	:xxxxxxxx
4. Date of Birth	:xxxxxxxx
5. Adhar Card No	:xxxxxxxx
6. Educational Qualification	:xxxxxxxx
7. Project Location	:xxxxxxxx
8. Experience	:xxxxxxxx
9. Pan No.	:xxxxxxxx
10.EMAIL	:xxxxxxxx

CHAPTER - II

PROJECT DESCRIPTION

Broccoli is an exotic vegetable. Broccoli farming is the good sources of income because of only a few farmers aware about how to grow broccoli and its marketing knowledge.

It is crisp and tasty to eat and use this vegetable in Salad. The size of broccoli's plant is the same as cauliflower. Currently, this vegetable has become popular in India, and the consumption of food has increased in the big five star hotels as well as at home for making this vegetable salad.

Dietitian refers to Broccoli is a safe food because it is a rich source of vitamins and minerals. It contains the most proteins and vitamin A than coal crops like cabbage and cauliflower. It also contains anti-cancerous compounds and antioxidants.

The following nutrients are available in 100 grams of Broccoli.

Contain	Amount
protein	2.8 g
Fiber	2.6 g
Calories	34
Water	89%
Omega-3	0.02 g
Omega-6	0.02 g

Broccoli crop required cold weather. This crop can be cultivated in all over India during the winter season and areas, where rainfall is less, is suitable for broccoli farming.
For Broccoli production, the ideal temperature required 25° C to 26 ° C during the day and 16° C to 17 ° C in the night.
To get through the year production broccoli farming done in the Greenhouse.

Land:

Broccoli can be grown in a wide variety of soils type. To get a better yield from broccoli crop sandy and silt loam soils are most preferred. The soil PH should be in between 5.5 pH – 6.5 pH.

Before Planting broccoli Land is plowed 3-4 times then add compost or well rotten FYM 25-30 tons/ hectare and mix thoroughly at the time of land preparation.

Preparation of seedlings:

Generally, most of the farmer create broccoli plant seedlings on own felid because most of the nursery don't create broccoli seedling due to less demand for broccoli seeling. so you can buy broccoli seed and prepared own broccoli plant seedlings.

For creating broccoli plant seedlings mainly two methods available

1. Soilless media – with the help of coco peat in the plastic nursery tray
2. Soil media – raised soil bed

Broccoli plant seedlings with soil Media procedure

- prepare 1 meter wide and 3 meters long and 30 cm wide soil bed.
- Mix roughly 10 kgs of good F.Y.M or compost manure into the soil in each bed. Likewise, add 50 grams of foret and 100 gm of Bavistin powder in each spring and mix them in soils.
- Then make 5 cm parallel to the width of the 2 cm deep line on the bed and sow broccoli seed after that cover the seeds with fine compost material.
- Provide light water with the help of a sprinkler.
- For one hectare, broccoli cultivating hybrid seeds requires approximately 312 grams.
- Seed germination starts after 5 to 6 days and seedlings and ready for transplantation within 35 days.
- At this time the transplantation the broccoli plant must have 4-5 leaves.
- The best time sowing of seeds is the second week of September.
- During plant growth, the temperature should be 20° C to 22 ° C.
- for better growth for the seedlings, the ideal night and day temperature is 20° C to 23° C
- Each time while giving water to the nursery Give quantity to be calcium nitrate and potassium nitrate, should be given to the plants mixed with 1.5 liters of water in one liter of water.
- Similarly, every 10-12 days of malathion or disease should be prevented due to diseases and diseases that do not affect the plants. + Bavistin 1 gm, or copper oxychloride 1.5 g per liter of water should be sprayed.

Broccoli variety:

This is top variety cultivated in India –

Roylegreen, Evergreen, Danube, Yugren, Salinas Pilgrim, Green Mountain, and Central, Premium Crop, Premium Pusa Broccoli.

Transplantation of plants:

Broccoli plant grow on a raised bed in rows and maintain the distance between raw to raw is 30 cm and plant to plant is 30 – 45 cm.

Approximately 66660 plants required for the one-hectare area. Generally, plantation did after afternoon after plantation.

Before planting the seedlings, seedlings should be Dip the solution of fungicide 12 ml in 10 liters of water.

Water Management:

For Broccoli crop, drip irrigation is very beneficial it improves crop yields an quality.

Light and frequent irrigation should be given after 10-15 days interval depending on weather condition and maintain soil moisture around the root zone.

Fertilizer Management:

Before start giving fertilizer to broccoli crop, It is necessary soil must be analyzed and then decide fertilizer dose quantity.

Generally, the broccoli crop is required to give 150 kg of Nitrogen, 100 kg of phosphorus and 170kg potassium per hectare.

Nitrogen 120 kg, 80 kg phosphorus and60 kg potash should be applied at the time of transplanting. The remaining half of nitrogen should be used in two split doses at 30 and 45 days after transplanting.

Give micronutrient according to the crop requirement. broccoli plant show born deficiency, so it is observed in the field then apply born with foiler spray or with water fertilizer

Weed management

After the 30 days transplanting remove weed, this weed competes for food sunlight and air with the main crop so maintain the crop weed free.

Also, rake the soil on the bed which helpful for increase oxygen level to the root zone.

Pests and diseases.

Diseases

1) Damping off:

It is a serious disease and It occurs in pre-emergence and the post-emergency phase. High humidity condition, heavy rainfall poor water drain soil and low temperature this are the favorable condition for this disease

control

Seed treatment with Thiram or Captan at 2.5-3 gm/kg of seed.

2) Downy Mildew:

White Hair like Fungus growth is observed on the leaves. After some time brown necrotic spots appear on the upper surface of leaves.

control

Avoid dense sowing of seeds in the nursery For controlling the disease. At disease, infestation stage sprays Mancozeb at 0.25% and repeat this spray after 7 – 8 days interval.

3) White rust:

It is a soil-borne disease caused by fungus Sclerotiniascelorotiorum. The white rust fungus attacks the lower surface of the outer leaves and plants suddenly die.

Control
The fungus Sclerotiniascelorotiorum cannot survive below 15cm of soil so deep ploughings help to control white rust. For controlling this white rust, the soil should be treated with a fungicide like Bavistin at 1gm/liter of water.

4) Black rot:

First signs appear on leaves; leaves become yellow in color at leaf margins areas. Plant Veins and veinlets start to turn brown and then become black. If this infection is observed at an early stage of the plant, the plants wilt and die

5) Alternaria leaf spot

It occurs mostly in moist regions, small dark coloured Spots are observed on the leaf of the plant after some time they become large circular with a 1mm in diameter.

Pest

1) Cutworms:

The size caterpillars larva is about 3 to 4 cm long; they are gray or brown in colour. The larva may cut several plants in a single night. They hide in the daytime and feed at night.
Control:

- use Pheromone Trap to control the production of caterpillar
- Grow of paired rows of the mustard crop after every 25 rows of the broccoli crop.
- If cutworm observed in large quantity in the broccoli field, then Spray insecticide like Rogoror, Endosulfan at 2 -3 ml/liter of water.

2) Aphids:

Aphids are small, soft-bodied, pear-shaped insects. They feed on the plants affecting the quality and production

control

A mustard crop can act as a trap crop for aphids. sprayNeems oil at 4% or Oxydemeton methyl @ 0.02% to control aphids insect.

3) Mustard sawfly:

Larva of mustard sawfly is greenish black with the wrinkled body. The larvae feed on leaves. The yield decrease 5% to 18 %.

control

spraying Chlorpyriphos or Quinalphos is effective against mustard sawfly.

Harvesting and Production:

After 80-90 days of transplanting crop ready to harvest. Harvest broccoli when it Heads become 3 to 6 inches size with a sharp knife also this crop must be harvested before small flower open present on the broccoli crop heads.

A good quality broccoli crop Heads weight is around 250-300 gm.

On an average, yield varies from 19 to 24 ton/hectare depending upon the variety. According to market demand broccoli pack in corrugated box or plastic crates

Broccoli farming is a good source of income.

CHAPTER-III

ECONOMICS OF THE PROJECT

A. PROJECT PROFILE (Financial)

Sr. No.	PARAMETERS	VALUE
1	Product	Broccoli Vegetable
2	Area in acre	5.00
3	Cost of the project	10,00,000
4	Bank loan	8,50,000
5	Own Contribution	1,50,000
6	Financial Indicators	
	BC R	1.49 :1
	N P W 15% (Rs.)	20,86,263
	I R R %	69.81
	Average DSCR	4.1
7	Interest Rate (% per annum)	9.2
8	Repayment	5 Years

B. BASIS & PRESUMPTIONS

1 Proposal is submitted under Prime Minister Mudra Yojana (PMMY)
CATEGORY- TARUN

2 Payback period 5 years.

3 Tax on income ignored.

4 Promoters share includes self-contribution plus loan from friends and relatives.

5 There is no change in Government policies and interest rates in next 5 years.

C. TOTAL COST OF PROJECT

SR. NO.	PARTICULAR	UNIT	UNIT RATE(Rs.)	QUANTITY	AMOUNT(Rs.)
1.	**Land & Land Development**				
a.	Land (on Lease)				-
b.	Land Development				
i)	Land Leveling	Acre	10,000	5.00	50,000
ii)	Fencing	Mtr	525	150	78,750
iii)	Farm Road	Mtr	200	150	30,000
				SUB TOTAL – 1	**1,58,750**
2.	**Irrigation**				
i)	Cost of Open/Tube Well	No	150000	1	1,50,000
ii)	Cost of Pipeline 110mm/4kg	Mtr	150	150	22,500
iii)	Cost of Sprinkler	Acre	25,000	5.00	1,25,000
				SUB TOTAL – 2	**2,97,500**
3.	**Cost of Cultivation**				
a.	Initial Cost of Planting Material				
i)	Planting Material (Spacing 30 cm* 40 cm)	Saplings	120000	2.0	2,40,000
b.	Initial cost of inputs				
i)	Fertilizer and Manure	Acre	5000	5.00	25,000
ii)	Insecticide and Pesticide	Acre	2500	5.00	12,500
iii)	Labour Charges	Acre	11500	5.00	57,500
				SUB TOTAL – 3	**3,35,000**
4.	**Infrastructure**				
i)	Cost of Storage Room (20'x10')	Sq. ft.	500	150	75,000
ii)	Labour Rooms (20'x10')	Sq. ft.	500	150	75,000
				SUB TOTAL – 4	**1,50,000**
5.	**Mechanization**				
i)	Cost of Sprayer & other farm equipments	Ls			58,750
				SUB TOTAL – 5	**58,750**
				GRAND TOTAL	**10,00,000**

D. MEANS OF FINANCE

Sr. No.	Particular	Unit	Quantity	Amount in Rs.
1	Term loan	%	85	8,50,000
2	Own contribution	%	15	1,50,000
			TOTAL	**10,00,000**

E. PROJECTED PROFITABILITY

Sr. No.	Particular	Unit	Unit rate in Rs.	Quantity	I year	II year	III year	IV year	V year
I.	**Income**								
a.	Production of Broccoli per cycle @ 2.25 tonn per acre* 5 acre (Each cycle is of 90 days)	Ton			11.3	11.3	11.3	11.3	11.3
b.	Number of production cycles in a year	Nos.			2.0	3.0	3.0	3.0	3.0
c.	Total production	Ton			22.5	33.8	33.8	33.8	33.8
d.	Income @ selling price Rs. 60 per Kg.	Rs.			13,50,000	20,25,000	20,25,000	20,25,000	20,25,000
				TOTAL (A)	**13,50,000**	**20,25,000**	**20,25,000**	**20,25,000**	**20,25,000**
II.	**Expenditure**								
a.	Replanting Material	acre	1,44,000	5.00	7,20,000	7,20,000	7,20,000	7,20,000	7,20,000
b.	Mannures & Fertilisers	acre	5,000	5.00	25,000	25,000	25,000	25,000	25,000
c.	Insectisides & Pesticides	acre	5,000	5.00	25,000	25,000	25,000	25,000	25,000
d.	Manpower (For land preparation, planting, Inter -cultural operation etc.	acre	10,000	5.00	50,000	50,000	50,000	50,000	50,000
e.	Packaging, Transportation etc.	acre	10,000	5.00	50,000	50,000	50,000	50,000	50,000
f.	Overhead (Electricity, Water etc.)	acre	5,000	5.00	25,000	25,000	25,000	25,000	25,000
g.	Rent for Land	acre	20,000	5.00	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
h.	Contengencies	acre	5,000	5.00	25,000	25,000	25,000	25,000	25,000
				TOTAL (B)	**10,20,000**	**10,20,000**	**10,20,000**	**10,20,000**	**10,20,000**
III.	**Net Income**			**TOTAL (A-B)**	**3,30,000**	**10,05,000**	**10,05,000**	**10,05,000**	**10,05,000**

F. Financial Analysis

Particulars		I year	II year	III year	IV year	V year
Capital Costs		10,00,000				
Recurring cost		10,20,000	10,20,000	10,20,000	10,20,000	10,20,000
Total Cost		**20,20,000**	**10,20,000**	**10,20,000**	**10,20,000**	**10,20,000**
Benefit		13,50,000	20,25,000	20,25,000	20,25,000	20,25,000
Depreciated value of buildings, fencing etc. @ 10%						1,80,773
Depreciated value of Machinery & equipments @ 15%						1,52,653
Total Benefit		**13,50,000**	**20,25,000**	**20,25,000**	**20,25,000**	**23,58,426**
Net Benefit		**-6,70,000**	**10,05,000**	**10,05,000**	**10,05,000**	**13,38,426**
Discounting Factor@ 15%		0.87	0.76	0.66	0.57	0.50
NPV cost at 15% DF		17,57,400	7,75,200	6,73,200	5,81,400	5,10,000
NPV benefits at 15% DF		11,74,500	15,39,000	13,36,500	11,54,250	11,79,213
NPW at 15% DF	**20,86,263**					
BCR at 15% DF	**1.49 :1**					
IRR %	**69.81**					

G. Term Loan Repayment

Rate of interst - % per annum : 9.20

Opening balance of term loan : 8,50,000

Year	Loan Outstanding	Net Income	Principal	Interest	Total Repayment	Net Surplus	DSCR
1	8,50,000	3,30,000	170000	78200	248200	81,800	1.3
2	6,80,000	10,05,000	170000	62560	232560	7,72,440	4.3
3	5,10,000	10,05,000	170000	46920	216920	7,88,080	4.6
4	3,40,000	10,05,000	170000	31280	201280	8,03,720	5.0
5	1,70,000	10,05,000	170000	15640	185640	8,19,360	5.4
						Avg. DSCR	**4.1**