



## **VEGETABLE PLANT NURSERY**

### **Introduction**

A nursery is a part of agriculture where baby plants or saplings are grown, propagated and nurtured to be sold out to agricultural farms, gardens and forests. The high yielding variety seeds are sown in a nursery, under favorable conditions to let them grow into saplings so that they can be grown in a large scale in farms and forests. A nursery caters to a huge variety of plants to serve the needs of its customers. Any nursery must be equipped with the horticulture needs such as high-quality seeds, fertile soil as needed, fertilizers and pesticides, spares and tools, plant and machinery and others so as to operate efficiently. Nurseries in urban regions are generally seen to be growing vegetables, flowers and ornamental plants. Therefore, to set up a nursery, a lot of factors need to be considered including the location as well as climatic conditions.

### **Market Potential**

Vegetable plant nursery is as important as any other nursery as the vegetables that are grown seasonally are consumed both in the season as well as in off-season. So, to cater to these needs, more and more nurseries are required to be set up. Even though State Governments are taking several measures for setting up of a greater number of nurseries, still the need of private players exists in the market. The demand for high quality food crops as well as the shift of consumers towards organic crops has increased considerably over the period. This makes the entry of new players in the market easy and hassle free.

### **Product Uses**

- Vegetable plant saplings are used for further plantation in farms and forests.
- They serve as a nutritional requirement for the body
- Vegetables if eaten in the right quantities, help in maintaining good health
- Vegetables are rich in fiber and give strength to the body to fight against diseases.

## Assumptions

### I. Model DPR has been prepared based on following assumptions:

- Land: 50,000 sq. ft. area has been taken for plantation, which is taken as own land. Area of land has been taken based on the level of operation.
- Division of area: Proposed area for nursery raising (i.e., the mother bed) is 50,000 sq. ft. The area for office and storage house has been taken as 500 sq. ft. and 300 sq. ft. respectively.
- Power: Consumption of power is more or less negligible, so DG Set of 20 KVA is required.
- Irrigation: The method of irrigation is Sprinkler Irrigation, for which cost of sprinklers have been taken as a part of Project Cost.
- Land Development Cost: Land development cost includes the following-
  - a) Cost of fencing (Barbed wire fencing with live wood fencing posts)
  - b) Storage Tank for water
  - c) Rain-water harvesting system
  - d) Sewage water and waste water treatment plant
- Mother bed preparation: Mother bed preparation cost includes the following-
  - a) Ploughing of land
  - b) Tilling of land
  - c) Compost application
- Civil works and Buildings: Civil works and Building cost include the following-
  - a) Solarization (Polyhouse)
  - b) Office area development
  - c) Storage House construction
- Preliminary and Preoperative period is taken as 6 months.
- Repayment of Term Loan and Interest thereon: The principal amount has been repaid half-yearly and the interest component has been paid quarterly.
- Working Capital: Working capital is in the form of KCC and interest on the same has been charged quarterly.

### II. The plants to be grown in the nursery and their specifications-

Name of the Plant	Cultivation Month	Annual Production (in units) In 50000 sq. ft.
Chilli plant	January – March	3,71,250
Tomato plant	April – June	3,71,250
Brinjal Plant	July - August	14,85,000
Cabbage Plant	September - October	9,90,000
Cauliflower Plant	November - December	6,18,750

### **CHILLI PLANT**

Chili plant is a species of capsicum and belongs to the Solanaceae family. A varied variety of chili plants are known to us, including the hot chili. They are shrub-like plants with oval leaves and green stems. Chilies are generally ready to harvest in 80-90 days. These plants need to be watered regularly with occasional feeding of high potash tomato fertilizer.



### **TOMATO PLANT**

Tomato is a species of Lycopersicon and belongs to the Solanaceae family. It is an herbaceous sprawling plant which grows to 1-3 meter in height and has a weak woody stem. It is considered one of the most important protective foods due to its special nutritional value. They have a wide range of application, both commercially and otherwise.



### **BRINJAL PLANT**

Brinjal is a crop that generally grows in the tropical regions. In botanical terms, it is a berry which is generally purple in colour with spongy features. It is very popular among Indians and is very easily available in the Indian market. It can be grown in the lower altitudes as it requires hot and humid temperature to grow. It is also a species of the Solanaceae family. It is a hardy crop that grows well in fertile soil.



### **CABBAGE PLANT**

Cabbage is a leafy vegetable, generally green or purple in colour. It takes 80-120 days to harvest and is rich in minerals like sodium, potassium and vitamins as well. It grows well in a temperature of 15°C-20°C. It requires sandy soil rich in inorganic matter having a pH level of 6.5-7.5. It belongs to the family of Wild cabbage.



## **CAULIFLOWER PLANT**

Cauliflower is a species of Brassica Oleracea and belongs to the Brassicaceae family. It is usually ready to be harvested in 50-80 days when the head size grows to about 6-8 inches in diameter. One plant can produce only one head, unlike broccoli which produces multiple heads. It grows best in temperature of 16-18°C. 100 grams of cauliflower contain about 25-30 calories.



## **Cost of Project**

Particulars	Amount (Rs. in lakhs)
Owned Land	-
Civil Works and Building	77.50
Land Development Cost (50,000 sq. ft.)	3.75
Mother Bed Preparation	1.80
Plant & Machinery (Annexure)	2.70
Miscellaneous Fixed Assets (Annexure)	1.95
DG Set	1.80
Escalation & Contingencies (2% on construction costs)	1.79
Preliminary & Preoperative Expenses	9.94
<b>Sub-total (A)</b>	<b>101.23</b>
Working Capital Margin @25% of Total WC Requirement	0.75
<b>Total Project Cost</b>	<b>101.98</b>
Total Working Capital Requirement (Lump sum) <b>(B)</b>	3.00
<b>MEANS OF FINANCE</b>	
<b>Total Funds Required (A+B)</b>	<b>104.23</b>
<u>Loan Component-</u>	
TERM LOAN (60% of A)	60.74
WORKING CAPITAL (75% of B)	2.25
<b>Total</b>	<b>62.99</b>
Equity	41.24
<b>Total</b>	<b>104.23</b>

## Detailed Cost Element

Sl. no.	Particulars	Quantity	Rate	Amount (Rs. in Lakhs)
1	Mild Steel Raised Bed Maker ABC R16	2	35,000	0.70
2	Power Tiller (14 HP)	2	1,00,000	2.00
Total				2.70

## Contingencies and Escalations

It has been assumed at approximately 2% at cost.

## Preliminary Expenses

Particulars	Amount (Rs. in Lakhs)
Incorporation Expenses	0.05
Project Report Preparation and Consultation	0.50
Legal Charges - Drafting for agreements, contracts, stamp paper, notary and affidavit cost	0.05
Security guard and others	8.10
Interest Cost for period before commercial operations	1.24
Total	9.94

## Salary

Designation	Manpower	Amount (Rs. in Lakhs)
Agricultural Technician	1	2.64
Office staff cum Accountant	1	1.44
Skilled Workers	4	4.32
Workers (Contract Basis)	6	5.40
Security Guard	2	2.40

## Profitability Statement

Amount (Rs. in lakhs)					
Particulars	Year- 1	Year- 2	Year- 3	Year- 4	Year- 5
<b><u>A. INCOME</u></b>					
Annual Sales	129.03	138.19	145.10	152.35	159.97
<b>Annual Income</b>	<b>129.03</b>	<b>138.19</b>	<b>145.10</b>	<b>152.35</b>	<b>159.97</b>
<b><u>B. OPERATING EXPENSE</u></b>					
Raw Material	75.32	76.83	78.37	79.93	81.53
Salary	16.20	16.52	16.85	17.19	17.54
Repair & Maintenance	1.94	2.07	2.18	2.29	2.40
Power	1.00	1.02	1.04	1.06	1.08
Depreciation	5.65	5.69	5.69	5.39	5.39
<b>Total Operating Expenses</b>	<b>100.11</b>	<b>102.13</b>	<b>104.12</b>	<b>105.86</b>	<b>107.94</b>
<b>OPERATING PROFIT (A-B)</b>	<b>28.91</b>	<b>36.05</b>	<b>40.97</b>	<b>46.49</b>	<b>52.03</b>
<b><u>C. FINANCIAL EXPENSES</u></b>					
Interest on Term Loan	4.98	4.24	3.50	2.77	2.03
Interest on WC Loan	0.19	0.19	0.19	0.19	0.19
<b><u>D. Other Expenses</u></b>					
Administration and general expenses	1.29	1.38	1.45	1.52	1.60
<b>Total Expenses</b>	<b>6.46</b>	<b>5.81</b>	<b>5.15</b>	<b>4.48</b>	<b>3.82</b>
<b>Profit before Tax</b>	<b>22.45</b>	<b>30.24</b>	<b>35.83</b>	<b>42.01</b>	<b>48.21</b>
Provision For Tax @ 25%	5.61	7.56	8.96	10.50	12.05
<b>Profit After Tax</b>	<b>16.84</b>	<b>22.68</b>	<b>26.87</b>	<b>31.51</b>	<b>36.16</b>
Dividend Declared	0.00	0.00	0.00	0.00	0.00
<b>Retained Profit</b>	<b>16.84</b>	<b>22.68</b>	<b>26.87</b>	<b>31.51</b>	<b>36.16</b>



## Breakeven Point

Break Even Point (BEP)		Amount (Rs. In Lakhs)				
SL	Particulars	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5
A.	Net Sales	129.03	138.19	145.10	152.35	159.97
B.	Variable Cost					
	Raw Material	75.32	76.83	78.37	79.93	81.53
	Power and Utility	1.00	1.02	1.04	1.06	1.08
	Total Variable Cost	76.32	77.85	79.41	81.00	82.61
C.	Contribution (A-B)	52.70	60.34	65.69	71.36	77.35
D.	Fixed and Semi-Fixed Cost					
	Salary	16.20	16.52	16.85	17.19	17.54
	Repair & Maintenance	1.94	2.07	2.18	2.29	2.40
	Interest on term Loan	4.98	4.24	3.50	2.77	2.03
	Interest on WC Loan	0.19	0.19	0.19	0.19	0.19
	Depreciation & Amortization	5.65	5.69	5.69	5.39	5.39
	Total Fixed Cost	28.96	28.71	28.41	27.82	27.54
E.	Breakeven Point	55%	48%	43%	39%	36%
F.	Cash BEP	44%	38%	35%	31%	29%

## Debt-Service Coverage Ratio

		Amount (Rs. In lakhs)				
SL	Particulars	Year - 1	Year - 2	Year - 3	Year - 4	Year - 5
i	Profit	16.84	22.68	26.87	31.51	36.16
ii	Depreciation	5.65	5.69	5.69	5.39	5.39
iii	Interest	4.98	4.24	3.50	2.77	2.03
A	Total (i + ii + iii)	27.47	32.61	36.06	39.66	43.58
i	Interest	4.98	4.24	3.50	2.77	2.03
ii	Principal repayment	8.68	8.68	8.68	8.68	8.68
B	Total (i + ii)	13.66	12.92	12.18	11.44	10.71
	DSCR (A / B)	2.01	2.52	2.96	3.47	4.07

## Interest on Term Loan and Principal Repayment

Refer Annexure I for Loan Repayment Schedule.

We have assumed the repayment tenure of term loan for a period of 5 years, Rate of interest being 8.5% p.a. with the moratorium period of 16 months.

## Address of Vendors

Name of the Vendor	Address and Contact Number
Syngenta India Limited	No. 2F, 2 <sup>nd</sup> Floor, Orbit House, 1, Garstin Plaza, Kolkata – 700 001
Harit Kranti Seeds Co.	Deulgaon Raja, Maharashtra – 443 204
The Phosphate Company Limited	3 <sup>rd</sup> Floor, 14, Netaji Subhas Road, Murgighata, B.B.D. Bagh Kolkata – 700 001



# ANNEXURE - 1

Year	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Annually
<b>I</b>													
<b>Principal</b>													
Opening	60.74	60.74	60.74	60.74	60.74	60.74	56.40	56.40	56.40	56.40	56.40	56.40	
Repaid						4.34						4.34	8.68
Closing	60.74	60.74	60.74	60.74	60.74	56.40	56.40	56.40	56.40	56.40	56.40	52.06	
Interest			1.29			1.29			1.20			1.20	4.98
<b>II</b>													
<b>Principal</b>													
Opening	52.06	52.06	52.06	52.06	52.06	52.06	47.72	47.72	47.72	47.72	47.72	47.72	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	52.06	52.06	52.06	52.06	52.06	47.72	47.72	47.72	47.72	47.72	47.72	43.38	
Interest			1.11			1.11			1.01			1.01	4.24
<b>III</b>													
<b>Principal</b>													
Opening	43.38	43.38	43.38	43.38	43.38	43.38	39.05	39.05	39.05	39.05	39.05	39.05	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	43.38	43.38	43.38	43.38	43.38	39.05	39.05	39.05	39.05	39.05	39.05	34.71	
Interest			0.92			0.92			0.83			0.83	3.50
<b>IV</b>													
<b>Principal</b>													
Opening	34.71	34.71	34.71	34.71	34.71	34.71	30.37	30.37	30.37	30.37	30.37	30.37	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	34.71	34.71	34.71	34.71	34.71	30.37	30.37	30.37	30.37	30.37	30.37	26.03	
Interest			0.74			0.74			0.65			0.65	2.77
<b>V</b>													
<b>Principal</b>													
Opening	26.03	26.03	26.03	26.03	26.03	26.03	21.69	21.69	21.69	21.69	21.69	21.69	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	26.03	26.03	26.03	26.03	26.03	21.69	21.69	21.69	21.69	21.69	21.69	17.35	
Interest			0.55			0.55			0.46			0.46	2.03
<b>VI</b>													
<b>Principal</b>													
Opening	17.35	17.35	17.35	17.35	17.35	17.35	13.02	13.02	13.02	13.02	13.02	13.02	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	17.35	17.35	17.35	17.35	17.35	13.02	13.02	13.02	13.02	13.02	13.02	8.68	
Interest			0.37			0.37			0.28			0.28	1.29
<b>VII</b>													
<b>Principal</b>													
Opening	8.68	8.68	8.68	8.68	8.68	8.68	4.34	4.34	4.34	4.34	4.34	4.34	
Repaid	-	-	-	-	-	4.34	-	-	-	-	-	4.34	8.68
Closing	8.68	8.68	8.68	8.68	8.68	4.34	4.34	4.34	4.34	4.34	4.34	-0.00	
Interest			0.18			0.18			0.09			0.09	0.55