

PROJECT REPORT ON
VERMICOMPOST



SUBMITTED BY

Promoter Name:
XXXXXXXXXXXXXXXXXX

Project Location:
XXXXXXXXXXXXXXXXXX

Prepared By:
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CHAPTER - I

ABOUT THE PROMOTER

PARTICULARS	ABOUT THE PROMOTER
1. Name	: xxxxxxxxxxxxxxxxxxxx
2. Address	: xxxxxxxxxxxxxxxxxxxx
3. Contact number	: xxxxxxxxxxxxxxxxxxxx
4. Adhaar No	: xxxxxxxxxxxxxxxxxxxx
5. Date of birth	: xxxxxxxxxxxxxxxxxxxx
6. Educational qualification	: xxxxxxxxx
7. Project location	: xxxxxxxxxxxxxxxxxxxx

PROJECT DESCRIPTION

Vermicompost is known to be the world's best fertilizer. Vermicomposting is a method of preparing enriched compost with the use of earthworms. It is one of the easiest methods to recycle agricultural wastes and to produce quality compost. Earthworms consume biomass and excrete it in digested form called worm casts. Worm casts are popularly called as Black gold. The casts are rich in nutrients, growth promoting substances, beneficial soil micro flora and having properties of inhibiting pathogenic microbes. Vermicompost is stable, fine granular organic manure, which enriches soil quality by improving its physicochemical and biological properties. It is highly useful in raising seedlings and for crop production. Vermicompost is becoming popular as a major component of organic farming system. Using Vermicompost can fulfill the requirements for organically grown products.

Vermicomposting materials:

Production Technology

Decomposable organic wastes such as animal excreta, kitchen waste, farm residues and forest litter are commonly used as composting materials. In general, animal dung mostly cow dung and dried chopped crop residues are the key raw materials. Mixture of leguminous and non-leguminous crop residues enriches the quality of vermicompost.

Red earthworm (*Eisenia foetida*) is preferred species of earthworms because of its high multiplication rate and thereby converts the organic matter into vermicompost within 45-50 days. Since it is a surface feeder it converts organic materials into vermicompost from top.

Process of vermicompost preparation:

Vermicomposting is done by either bed or pit method. In bed method composting is done on the pucca / kachchafloor by making bed of organic mixture while in pit method it is done in the cemented pits.

- Vermicomposting unit should be in a cool, moist and shady site
- Cow dung and chopped dried leafy materials are mixed in the proportion of 3: 1 and are kept for partial decomposition for 15 – 20 days.
- A layer of 15-20cm of chopped dried leaves/grasses should be kept as bedding material at the bottom of the bed.
- Beds of partially decomposed material of size 6x2x2 feet should be made.
- Each bed should contain 1.5-2.0q of raw material and the number of beds can be increased as per raw material availability and requirement.
- Red earthworm (1500-2000) should be released on the upper layer of bed.
- Water should be sprinkled with can immediately after the release of worms
- Beds should be kept moist by sprinkling of water (daily) and by covering with gunny bags/polythene.
- Bed should be turned once after 30 days for maintaining aeration and for proper decomposition.
- Compost gets ready in 45-50 days. The finished product is 3/4th of the raw materials used.

Harvesting:

When raw material is completely decomposed it appears black and granular. Watering should be stopped as compost gets ready. The compost should be kept over a heap of partially decomposed cow dung so that earthworms could migrate to cow dung from compost. After two days compost can be separated and sieved for use.

CHAPTER - III

MARKET POTENTIAL

Vermicompost has been emerging as an important source in supplementing and substituting chemical fertilizers in agriculture. Vermicompost, also known as 'farmers' friend' is used for general crops and plantation crops. It is a valuable input for sustainable agriculture and wasteland development. It is a growth promoter and helpful in providing hormones required for plant growth.

There is a lot of demand for vermicompost among farmers as its use increases quality of agricultural products and its price is also cheaper. It is also used widely in pot culture and in home gardens. In addition, many government departments including agriculture, forest and horticulture buy it in bulk. Its demand has decreased over the years.

Government agencies and NGOs are popularizing organic agriculture using vermicompost by organizing awareness campaigns and film show in rural and urban areas.

CHAPTER – IV

SWOT ANALYSIS

Strength:

- Infertility and soil erosion are the main problems in front of Indian farmers, the use of vermi compost improves soil structure, texture, aeration, water holding capacity and prevent soil erosion
- It is an easily adoptable low cost technology.
- Cheap price as compare to chemical fertilizers.
- Crops harvested by using this manure has high demand in international market. This crop fetches premium selling price.
- Media is creating awareness about importance of vermicompost at national and international level.

Opportunities:

- People are more concerned about their health so they want to consume organic food.
- Hundreds of tones biodegradable organic waste is being thrown in cities creating disposal problems in the country. This waste can be converted into valuable compost by utilizing as raw material.
- Legitimate support by the government to the farmers to start this unit.
- Absence of competitors in the market can be a big opportunity for producers.
- Wide scope at national and international level.

Weakness

- At initial level its use increases the cost of production.
- Less awareness among the people.
- Because of the natural way of production, we cannot reduce the production time.

Threats

- Some small players have distorted its image in its nascent stage.
- 90% farmers are using chemical fertilizers. Farmer does not take initiative to convert his farm into organic
- Big sellers of chemical fertilizers are hushing up the progress of small producers of Vermi Compost by offering attractive margins to wholesalers so that they would sell chemical fertilizers only.

CHAPTER- V
ECONOMICS OF THE PROJECT

A. PROJECT PROFILE (Financial)

Sr. No. PARAMETERS	VALUE
1 Type of Project	Vermicompost
2 Unit Size tonns/annum	450
3 Product	Vermicompost, Vermiculture
4 Cost of the project	8,65,000
5 Bank loan	8,21,750
6 Margin money	43,250
7 Financial Indicators	
BCR at 15% DF	1.43 :1
NPW at 15% DF Rs.	15,07,040
I R R %	65
Average DSCR	3.2
8 Interest Rate (% per annum)	12.0
9 Repayment Period	5 years

B. BASIS & PRESUMPTIONS

Sr. No.	Particular	Unit	Quantity
I. Techno-economic parameters			
	One cycle of production	days	75
	Total cycles in a year	Nos.	5
	Repayment period	year	5
II. Expenditure norms			
	Agro waste	Rs./ton	300
	Cow dung	Rs./ton	350
	Mother earthworms	Rs./Kg.	50
	Cost of skilled worker per month	Rs.	4,500
	Cost of unskilled worker per month	Rs.	3,500
III. Income norms			
	Rate of Vermicompost	Rs./ton	4,000
	Rate of Vermiculture	Rs./Kg.	50
	Production of vermicompost per cycle	tonns	90
	Production of worms per tonne of vermicompost	kg	5

C. TOTAL COST OF PROJECT

Sr. No.	Particular	Unit	Unit rate	Quantity	Amount in Rs.
I. Capital Cost					
1	Land & Site Development				
	Land				Own
	Site development	Ls			10,000
					<u>10,000</u>
2	Building				
	Shed of vermicompost unit	Sq. ft.	225	1,200	2,70,000
	Platform with shed For Finished Goods	Sq. ft.	250	150	37,500
	Finished good Godowons, Labour quarter, Store Office	Sq. ft.	300	600	1,80,000
	Water tank	Ls.			10,000
					<u>4,97,500</u>
3	Machinery & Equipments				
	Shovels, Spades, Crowbars, Iron Baskets& Others	Ls.			30,000
	Plumbing and Fitting tools	Ls.			15,000
	Power Operated Shredder	Nos.	20000	1	20,000
	Weighing Scale & Weighing Machine	Nos.	5000	1	5,000
	Pumpset	Nos.	10000	1	10,000
	Water Supply System-pipe, dripper etc.	Nos.	10000	1	10,000
	Wheel barrows/ trolley with handle	Nos.	8,000	1	8,000
	Sieving machine	Nos.	30,000	1	30,000
	Culture tray	Nos.	250	30	7,500
					<u>1,35,500</u>

4 Misc. Fixed Assets

Electrification costs incl.electrification, cabling cost, illumination, etc.	Ls.			23,690
Furniture & Fixtures	Ls.			25,000

48,690

5 Contengencies	%	5		13,310
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13,310

TOTAL (A) 7,05,000

II. Working Capital (Operational cost for one cycle of 75 days)

1 Agro waste	Tonns	300	200	60,000
2 Cow dung	Tonns	350	75	26,250
3 Mother earthworms	Kg.	50	750	37,500
4 Packaging	Ls			3,000
5 Electricity, Water	Ls			3,000
6 Skilled workers	Rs. per month	7,500	1	15,000
7 Unskilled workers	Rs. per month	5,500	1	11,000
8 Office Expenses	Ls			4,250

TOTAL (B) 1,60,000

TOTAL COST OF PROJECT

TOTAL (A+B) 8,65,000

D. MEANS OF FINANCE

Sr. No.	Particular	Unit	Quantity	Amount in Rs.
1	Term loan	%	95	8,21,750
2	Own contribution	%	5	43,250
			TOTAL	8,65,000
				3,02,750
3	Subsidy entitlement from PMEGP @ 35% of total cost of project Category- OBC (Rural)			

E. PROJECTION OF PERFORMANCE & PROFITABILITY

Sr. No.	Particular	Unit	Unit rate in Rs.	Quantity	I year	II year	III year	IV year	V year
Income									
	Capacity Utilized	%			60	70	80	90	90
a.	Vermicompost in tonns	Ton	4,000	450	1080000	1260000	1440000	1620000	1620000
b.	Vermiculture in kg.	Kg.	50	2000	60000	70000	80000	90000	90000
c.	Interest on subsidy @ 6%				18,165	18,165	18,165	18,165	-
d.	Subsidy				-	-	-	-	3,02,750
TOTAL (A)					11,58,165	13,48,165	15,38,165	17,28,165	20,12,750
Expenditure									
a. Cost of Raw Materials									
	Agro waste	Tonns	300	1,000	2,50,000	3,00,000	3,00,000	3,00,000	3,00,000
	Cow dung	Tonns	350	375	1,10,000	1,31,250	1,31,250	1,31,250	1,31,250
	Mother earthworms	Kg.	50	4500	1,75,000	2,25,000	2,25,000	2,25,000	2,25,000
b. Cost of Consumables									
	Packaging	Ls			15,000	5,000	5,000	5,000	5,000
c. Cost of Utilities									
	Electricity, Water	Ls			15,000	15,000	15,000	15,000	15,000
d. Cost of Manpower									
	Skilled workers	Rs. annum	90,000	1	90,000	99,000	1,08,900	1,19,790	1,31,769
	Unskilled workers	Rs. annum	66,000	1	66,000	72,600	79,860	87,846	96,631
e. Overhead Expenses									
	Office Expenses	Ls			21,250	21,250	21,250	21,250	21,250
	Marketing expenses @ 1% of	Ls			11,400	13,300	15,200	17,100	17,100
TOTAL (B)					7,53,650	8,82,400	9,01,460	9,22,236	9,43,000
Net Income		TOTAL (A-B)			4,04,515	4,65,765	6,36,705	8,05,929	10,69,750

F. Financial Analysis

Particulars	I year	II year	III year	IV year	V year
Capital Costs	7,05,000				
Recurring cost	7,53,650	8,82,400	9,01,460	9,22,236	9,43,000
Total Cost	14,58,650	8,82,400	9,01,460	9,22,236	9,43,000
Benefit	11,58,165	13,48,165	15,38,165	17,28,165	20,12,750
Depreciated value of buildings, fencing, borewell etc. @ 10%					2,91,286
Depreciated value of equipments @ 15%					78,925
Total Benefit	11,58,165	13,48,165	15,38,165	17,28,165	23,82,961
Net Benefit	-3,00,485	4,65,765	6,36,705	8,05,929	14,39,962
Discounting Factor@ 15%	0.87	0.76	0.66	0.57	0.50
NPV cost at 15% DF	12,69,025	6,70,624	5,94,964	5,25,675	4,71,500
NPV benefits at 15% DF	10,07,604	10,24,605	10,15,189	9,85,054	10,06,375
NPW at 15% DF	15,07,040				
BCR at 15% DF	1.43	:1			
IRR %	65.15				

G. Term Loan Repayment

Rate of interest - % per annum : 12.0
 Opening balance of term loan : 8,21,750

Year	Loan Outstanding	Gross Surplus	Principal	Interest	Total Repayment	Net Surplus	DSCR
1	8,21,750	4,04,515	164350	98610	262960	1,41,555	1.5
2	6,57,400	4,65,765	164350	78888	243238	2,22,527	1.9
3	4,93,050	6,36,705	164350	59166	223516	4,13,189	2.8
4	3,28,700	8,05,929	164350	39444	203794	6,02,135	4.0
5	1,64,350	10,69,750	164350	19722	184072	8,85,678	5.8
						Avg. DSCR	3.2